

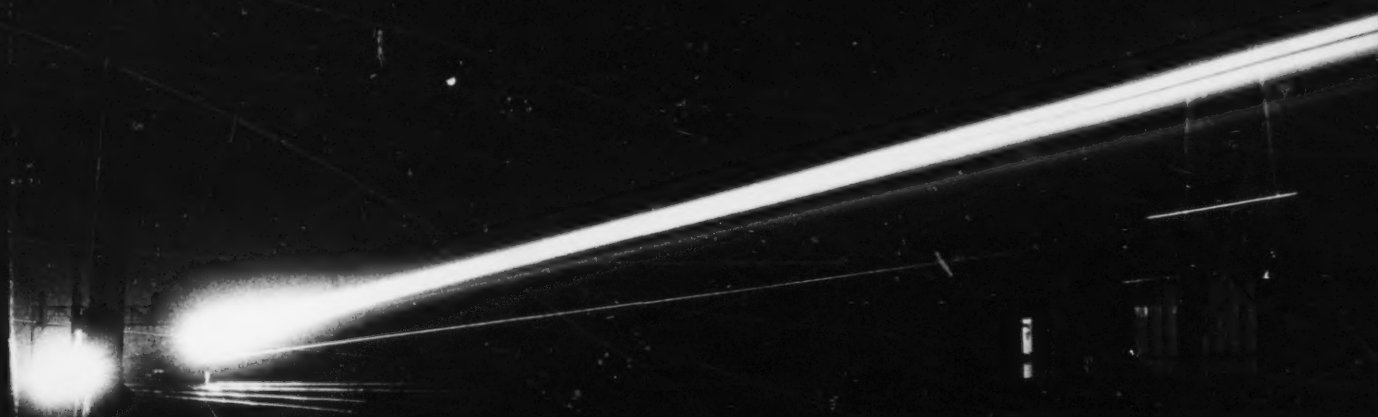
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October 1986

Railway Age

...for the new age of railways

**Advanced train controls
signal reduced costs**



The optical fiber options

Coal keeps C&NW in the black

**What makes Toronto
Transit different**

Features

35 High-productivity railroading: ATCS as a management tool

The Advanced Train Control Systems Project is designed not only to reduce train operation costs but also to provide a more marketable transportation product.

41 R&D: The AAR's new 5-year plan

As outside research and development funds have shrunk, the railroad's own program is viewed as increasingly important to their long-term viability.

50 Exploring the optical fiber options

The industry stands to profit from lightwave communications in a number of ways, but the full potential remains to be measured.

56 Coal line keeps C&NW in the black

North Western is now hauling 28.5% of the Powder River Basin coal to which it has access—and it has the capacity to move considerably more.

68 What makes Toronto Transit different

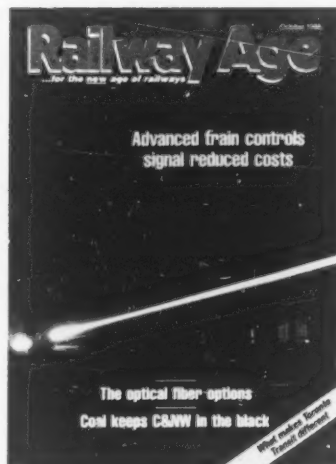
TTC says the secret of its success is that it runs its system like a business, not a social service, and markets it as a preferred way of travel.

75 Vancouver's SkyTrain: A crowd pleaser

BC Transit's ALRT system, a big hit with Expo '86 visitors, is also popular with Vancouverites—because "it goes where commuters want to go."

87 US&S: A company on the move

In a major reorganization, Union Switch & Signal has moved to a modern new headquarters and shifted its manufacturing operations to the South.



Conrail signal bridge near Buffalo, N.Y. photographed by Kent Patterson.

- 31 Thrall, Alcan building second aluminum car
- 31 CGE may build locomotives in Canada
- 32 Paducah shop included in new ICG sale
- 33 UP seeks to buy Overnite trucking
- 33 BN agrees to sell Otter Tail line
- 64 Florida orders cars for commuter service
- 64 Funding approved for new San Diego line
- 64 New Dallas plan wins final approval
- 66 Matra sees growing market in the U.S. for people-movers
- 66 Maryland phasing in new AEM-7 electrics
- 67 NYCTA: "Well on the road to recovery"

Update

- 23 Trailer Train board rejects sale proposal, declares a dividend
- 23 Return on investment drops below 4%
- 24 ACF: 30 years of R&D
- 26 Foster helps launch another regional
- 28 Five P&LE officers buy the railroad
- 29 is ICG write-down a "for sale" sign?
- 29 Cummins executive picked to head UP
- 30 ICC exempts most boxcar joint rates
- 30 BN sells trackage to Washington Central

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on Labor
- 62 In Transit
- 102 Publisher's Perspective

Departments

- 8 Meetings
- 13 Industry Outlook
- 14 Market Outlook
- 16 Revenues & Expenses
- 81 Letters
- 83 People in the News
- 89 Products
- 92 New Literature
- 101 100 Years Ago

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Market Outlook

Facilities

Conrail: Completed construction of an \$800,000 computerized materials warehouse adjacent to its diesel locomotive servicing facility at Collinwood, Ohio. Jeremy T. Whatmough, vice president-materials & purchasing, said the new warehouse "will greatly improve operating efficiency at the terminal because in the past, parts for the terminal were stored within the existing shop and in trailers and open storage areas."

Metropolitan Atlanta Rapid Transit Authority: General Railway Signal is the apparent low bidder, at \$4.1 million, for equipping MARTA's South Yard. GRS will provide the engineering and 34 switch machines, 41 signals, a factory-wired electronic equipment housing and train traffic control office equipment. The project is to be completed in June 1988.

Equipment

Maryland DOT: Awarded a \$10.5-million contract to Sumitomo Corp. of America for 13 new cars that are scheduled to go into MARC (Maryland Rail Commuter) service in 1987. They will be identical to 15 MARC II cars that were placed in service in December 1985. Car bodies will be built in Japan by Nippon Sharyo; final assembly will be done by General Electric in Cleveland. About 60% of the value of the contract will be spent in the U.S. The new cars will be used primarily on the line that runs from Camden Station in Baltimore to Union Station in Washington, D. C. Ridership on this line has exceeded seating capacity in recent months, according to State Railroad Administrator Richard Keen.

New York City Transit Authority: Placed an order with Westinghouse-Amrail for an additional 200 R-68 cars, for service on the Astoria/Sea Beach lines. An earlier order for 225 cars, for use on NYCTA's "D" and "Q" lines, is now being delivered. Under the contract with Westinghouse-Amrail, NYCTA has an option to purchase still another 200 cars. The original order was priced at \$1.18 million per car.

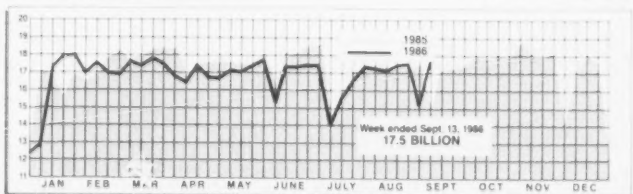
Revenue freight carloadings

Commodity	Sept. 13 week	Sept. 6 week	Aug. 30 week	Aug. 23 week
Grain	28,288	20,789	23,073	25,116
Other farm products	3,838	2,466	2,711	2,848
Metallic ores	17,191	15,319	14,149	16,381
Coal	117,392	97,986	112,828	117,441
Crushed stone, gravel and sand	15,007	11,923	14,816	15,090
Nonmetallic minerals	8,358	7,196	7,541	8,726
Grain mill products	10,817	9,179	10,487	10,420
Food and kindred products	10,777	9,328	10,771	10,789
Primary forest products	10,455	8,316	10,229	9,999
Lumber and wood products except furniture	7,917	6,282	8,420	7,956
Pulp, paper and allied products	12,473	12,093	12,603	12,755
Chemicals and allied products	25,051	21,656	25,776	24,044
Petroleum products	4,561	3,921	5,178	4,963
Stone, clay and glass products	10,632	8,807	10,890	10,403
Coke	3,442	3,606	3,674	3,498
Metals and products	7,291	6,430	7,805	7,140
Motor vehicles and equipment	20,563	16,432	18,854	17,757
Waste and scrap materials	7,642	6,343	7,966	7,778
Forwarder and shipper assn. traffic	3,395	2,913	3,684	3,398
All other carloads	69,317	60,456	71,785	69,083
LCL traffic	90	111	93	79
Total Cars Loaded	394,497	331,552	383,323	385,624
% change from previous year	0.3	(0.4)	(2.6)	(0.0)
Estimated revenue ton-miles (billions)	17.5	15.1	17.5	17.4
% change from previous year	2.3	3.6	1.3	1.7
Total:	1986	1985	% change	
37 weeks	624.0	625.7	(0.3)	

Piggyback loadings

	Sept. 6 week	Aug. 30 week	Aug. 23 week	Aug. 16 week
Trailers containers	86,822	104,750	99,388	98,014
Cumulative total, 36 weeks				
Trailers containers		3,381,855	9.4	
			% change from 1985	

Rail freight traffic trends



Source: Association of American Railroads

Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	August 1986	8 months 1986	1985	August 1986	8 months 1986	1985	Sept. 1, 1986	Average Backlog 1986	1985
Built new by carbuilders	1,161	6,402	7,646	1,081	8,345	6,702	3,702	3,621	4,036
Built new in RR shops	0	0	406	0	0	0	0	0	0
Built new—total	1,161	6,402	8,052	1,081	8,345	6,702	3,702	3,621	4,036
Rebuilt	0	50	0	0	75	0	25	16	0
TOTAL	1,161	6,452	8,052	1,081	8,420	6,702	3,727	3,637	4,036
Locomotives (new and rebuilt)	29	253	373	N/A	N/A	N/A	109	162	260

Source: Transportation Div., AAR and American Railway Car Institute

REVENUES AND EXPENSES OF RAILWAYS

Second quarter figures of calendar year 1986

(Dollar figures are stated in thousands, i.e., with last three digits omitted)

		Operating revenues										Operating expenses												
		Way & structures					Equipment					Way & structures					Equipment							
		Other	Freight	Total	1986	1985	Deprec.	Total	1986	1985	Deprec.	Total	1986	1985	Deprec.	Total	1986	1985	Deprec.	Total	Operating Ratio	Income after fixed charges	Net Ry. operating income	Net income
3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	3 mos.	6 mos.	
Amtrak	—	209,897	209,897	217,420	52,737	57,578	17,098	95,448	95,884	21,111	386,746	399,390	184,25	183,69	(170,846)	(176,879)	(176,849)	(170,846)	(176,879)					
	—	404,081	404,081	392,964	105,424	120,256	33,599	188,614	194,655	42,167	771,914	806,538	191,02	205,24	(356,990)	(402,278)	(367,833)	(356,990)	(402,278)					
Atchafalpa, Topeka & Santa Fe	3 mos.	461,564	10,019	471,583	543,030	85,956	89,638	16,395	114,277	122,138	22,822	437,660	497,786	92,80	91,86	27,775	40,588	27,537	21,155	32,712				
	6 mos.	959,321	21,368	980,689	1,092,134	172,068	181,180	32,672	233,997	252,849	46,304	912,871	1,022,150	93,08	93,59	55,344	74,881	53,436	40,495	60,281				
Boston & Maine	3 mos.	15,412	872	16,284	30,237	2,808	3,921	442	7,239	9,478	80	19,940	29,163	122,75	96,44	(3,069)	1,162	(3,632)	(3,069)	1,162				
	6 mos.	38,491	1,863	40,354	59,033	6,508	8,077	884	15,973	18,477	160	45,187	57,725	111,97	97,78	(379)	2,079	(4,685)	(379)	2,079				
Burlington Northern	3 mos.	895,040	20,595	915,635	1,001,700	512,254	146,863	398,698	218,170	180,702	44,847	1,181,248	805,396	129,00	80,40	(274,709)	196,249	(122,551)	(467,486)	114,497				
	6 mos.	1,839,449	43,289	1,882,738	2,057,296	669,034	319,019	442,951	407,138	368,383	62,156	2,006,688	1,667,243	106,58	81,04	(1,38,344)	395,291	(39,006)	(389,265)	233,200				
Chicago & North Western	3 mos.	181,117	24,373	205,490	208,480	38,863	38,890	6,417	49,313	47,991	3,486	193,043	198,252	93,94	95,09	4,770	2,375	12,265	4,620	2,575				
	6 mos.	367,970	50,284	418,254	413,114	78,427	79,155	13,080	98,336	97,055	6,954	395,976	405,548	94,67	98,16	8,299	(12,510)	22,419	8,399	(10,335)				
Conrail	3 mos.	774,528	23,307	797,835	824,662	109,109	107,902	24,217	168,794	172,618	32,827	657,700	691,253	82,43	83,82	144,945	154,812	101,539	144,945	154,812				
	6 mos.	1,508,796	48,790	1,558,586	1,613,334	235,409	238,298	49,197	345,775	359,316	68,003	1,371,896	1,434,241	88,02	88,89	204,727	209,485	132,849	204,727	209,485				
CSX	3 mos.	1,141,823	35,258	1,177,081	1,237,533	159,320	166,634	37,615	296,806	303,198	32,721	987,756	1,070,255	83,91	86,48	181,987	158,070	119,637	111,547	108,921				
	6 mos.	2,250,813	66,741	2,317,554	2,439,761	313,945	340,757	74,228	593,747	614,690	67,774	1,993,793	2,159,219	86,02	88,50	297,102	283,288	212,989	181,950	189,819				
Delaware & Hudson	3 mos.	17,646	242	17,888	27,659	3,690	4,297	365	7,219	7,530	134	20,117	27,001	112,46	97,62	(3,059)	1,007	(2,276)	(3,059)	1,007				
	6 mos.	42,563	699	43,262	53,959	8,936	9,276	729	15,731	15,986	269	46,452	56,296	107,37	103,33	(4,801)	(2,425)	(3,164)	(4,801)	2,425				
Denver & Rio Grande Western	3 mos.	76,979	955	77,934	84,438	12,576	12,905	3,541	14,579	15,190	3,321	68,057	74,234	87,32	87,91	11,302	8,724	4,901	6,178	5,266				
	6 mos.	151,342	2,321	153,663	169,456	24,730	27,032	7,003	29,325	30,850	6,647	134,313	151,141	87,40	89,19	19,774	18,036	10,964	11,099	11,281				
Elgin, Joliet & Eastern	3 mos.	14,210	5,743	19,953	23,831	6,621	3,502	603	3,250	3,622	1,828	19,238	21,735	96,41	91,20	2,677	3,633	(173)	1,789	1,978				
	6 mos.	28,122	12,594	40,716	44,538	10,090	6,573	1,202	6,865	6,879	3,749	40,376	42,058	99,16	94,43	3,708	5,453	(909)	2,459	3,113				
Florida East Coast	3 mos.	28,610	681	29,291	28,048	4,528	4,866	1,233	5,286	5,801	1,307	22,765	23,269	77,72	82,96	8,950	10,362	2,064	4,498	6,151				
	6 mos.	57,622	1,550	59,172	59,376	9,167	9,636	2,481	10,045	11,363	2,558	45,542	46,003	76,96	77,47	17,978	22,133	4,747	9,095	12,609				
Grand Trunk Western	3 mos.	82,033	3,943	85,976	85,729	9,850	10,796	1,720	19,046	19,351	1,606	86,522	84,877	100,63	99,00	10,114	349	(848)	10,679	2,444				
	6 mos.	161,629	7,440	169,069	174,531	20,293	21,365	3,440	38,951	39,518	3,232	176,300	172,114	104,27	98,61	3,637	655	(6,380)	5,138	3,818				
Illinois Central Gulf	3 mos.	153,029	17,828	170,857	223,415	23,835	27,832	9,610	58,864	68,517	4,309	168,838	210,751	98,81	94,33	(2,313)	6,252	8,242	3,748	5,580				
	6 mos.	334,962	37,656	372,618	465,275	50,102	59,709	20,051	120,843	140,073	8,781	339,145	440,772	91,01	94,73	23,341	11,116	31,719	21,263	9,105				
Kansas City Southern	3 mos.	67,231	3,364	70,595	82,283	12,458	12,181	4,512	16,097	17,869	5,237	60,827	69,612	86,16	84,60	7,795	10,736	6,781	4,589	6,660				
	6 mos.	144,641	7,148	151,789	161,307	25,305	23,296	8,173	31,864	36,188	10,323	126,894	139,330	83,59	86,37	21,953	18,062	16,868	13,623	10,953				
Missouri-Kansas-Texas	3 mos.	55,562	2,799	58,361	71,404	11,464	13,474	2,738	14,489	16,546	1,810	56,270	66,184	96,41	92,68	4,200	2,912	2,348	4,200	2,912				
	6 mos.	114,070	5,704	119,774	137,096	21,865	25,933	5,676	28,686	32,666	3,726	114,967	129,293	95,98	94,30	5,420	2,814	5,327	5,420	(2,596)				
Missouri Pacific	3 mos.	391,413	10,001	401,414	412,573	65,611	61,801	13,333	100,529	104,385	19,447	369,827	369,068	89,63	96,72	24,855	2,629	160,309	(130,826)	1,595				
	6 mos.	801,450	23,357	824,807	855,249	125,388	126,701	27,569	201,672	207,539	38,984	733,924	802,823	88,98	93,87	54,033	29,817	203,425	(110,217)	29,222				

Norfolk & Western	3 mos.	408,642	15,845	424,487	452,027	60,398	55,417	12,604	84,831	84,599	14,112	321,740	327,303	75,79	72,40	126,610	141,792	50,881	74,216	83,248
	6 mos.	811,380	31,945	843,325	878,506	126,382	117,301	24,945	171,947	171,991	27,375	661,913	678,759	78,48	77,26	217,394	235,287	91,861	126,731	139,216
St. Louis Southwestern	3 mos.	89,121	1,135	90,256	98,896	15,590	13,584	4,720	21,222	26,396	5,244	83,176	94,830	92,15	95,88	7,124	5,985	4,606	4,650	3,787
	6 mos.	173,645	2,536	176,181	199,301	28,107	28,504	9,583	42,185	54,080	10,476	164,913	192,315	93,60	96,49	12,979	10,066	7,045	8,756	6,520
Soo Line	3 mos.	147,655	4,405	152,060	165,595	30,570	34,354	7,331	39,647	42,173	3,476	149,874	166,564	98,56	100,59	2,494	(11,020)	5,404	4,948	(4,716)
	6 mos.	299,919	8,701	308,620	284,976	60,511	55,341	14,519	73,877	70,670	6,807	302,757	279,525	98,10	98,08	3,441	(8,324)	8,936	5,321	(2,945)
Southern Pacific	3 mos.	479,504	18,578	498,082	537,333	73,892	65,217	24,872	127,127	143,857	21,042	479,507	521,813	96,27	97,11	26,546	28,336	21,961	29,530	31,225
	6 mos.	932,007	36,129	968,136	1,057,963	146,013	142,451	49,222	262,230	296,965	41,494	1,012,733	1,069,788	104,60	101,11	(8,055)	107	(38,003)	(2,262)	4,814
Southern	3 mos.	421,241	8,880	430,121	434,787	98,068	63,913	16,560	84,542	89,877	20,953	322,546	340,265	74,98	78,26	109,714	92,244	64,428	65,158	54,727
	6 mos.	846,641	18,829	865,470	867,904	127,156	125,996	34,602	173,566	183,899	39,286	669,827	701,505	77,39	80,82	194,999	166,413	120,696	117,293	97,835
Union Pacific	3 mos.	481,452	4,549	486,001	484,529	61,171	72,902	18,349	94,705	88,236	22,504	375,862	402,771	77,33	83,12	104,565	80,421	295,435	(139,754)	56,991
	6 mos.	952,135	9,460	961,595	971,306	131,254	145,135	36,650	192,599	192,788	44,428	777,286	838,956	80,83	86,37	192,685	137,066	266,155	(85,125)	92,956
Western Pacific	3 mos.	43,021	463	43,484	42,117	7,681	10,125	1,514	11,384	11,493	1,014	44,350	51,758	101,99	122,89	(6,423)	(14,680)	16,027	(17,579)	(7,527)
	6 mos.	83,454	971	84,425	75,172	13,281	16,178	2,984	19,935	19,181	2,050	82,822	89,750	98,10	119,39	(3,035)	(18,138)	17,808	(14,879)	(7,933)

Source: Interstate Commerce Commission

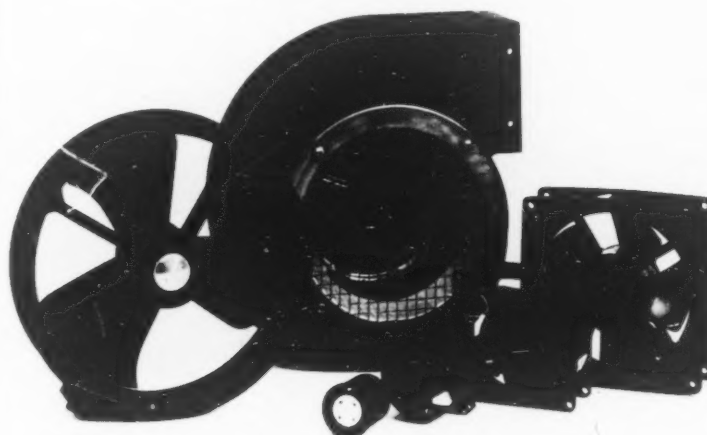
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Watching Washington

Where the railroads are investing their capital dollars

The dramatic shift that has taken place in recent years in the way railroads invest their capital dollars is highlighted in the just-published 1986 edition of *Railroad Ten-Year Trends*, which is compiled by the Economics and Finance Department of the Association of American Railroads.

In 1976, the railroads spent 68 cents of every capital improvement dollar on equipment (locomotives and freight cars); and 32 cents on roadway and structures.

That time-honored relationship—about one-third plant, two-thirds rolling stock—held pretty steady through the year 1980. It was in 1981 that the equipment glut came to be really apparent; that year, 53 cents went for rolling stock and 47 cents for plant. In 1983, when freight-car orders reached an all-time low, rolling stock got only 16.5 cents of the investment dollar and plant got 83.5 cents.

Since that time there has been a slight reversal of the trend. Last year, rolling stock was back to 21.9 cents of the total. This year, with freight-car orders running about 25% ahead of '85 levels, rolling stock will make a further small recovery in its capture of total capital outlays.

In dollar outlays, the 1985 capital-spending picture shaped up like this:

Out of total expenditures of \$4,422,903,000, fixed plant got \$3,458,015,000, of which \$81,467,000 went for communications, \$142,370,000 for signals and interlockings, and \$3,324,178,000 for "other road," mostly improvements to track. Equipment expenditures added up to \$964,888,000: locomotives, \$660,917,000; freight cars, \$162,445,000; and other equipment, \$145,526,000.

Another document just published by the AAR's Economics and Finance Department (and available to new subscribers for \$75) is *Analysis of Class I Railroads, 1985*. It contains 778 lines of operating and financial statistical data for each of the Class I railroads, including a breakdown of how they spent their capital dollars.

It concludes with industry rankings—first by railroad, then by system.

Among railroads, the Burlington Northern last year ranked first in all except one category. BN produced 20.99% of all revenue ton miles, operated 16.66% of all road miles and 14.53% of all track miles, collected 14.65% of all operating revenues and 14.83% of all freight revenues, and earned 27.32% of all ordinary (net) income and 26.24% of all net railway operating income. BN accomplished this with a plant representing 14.44% of total railway investment, with 12.69% of the total workforce, and with 12.25% of all owned and leased locomotives. BN ranked only fifth in the number of owned and leased freight cars, with 8.15% of the total (Seaboard was first with 12.20%).

Among railroad systems, a different picture emerged. While BN remained first in miles of road operated (16.66%), CSX was first in miles of track (15.45%), in both operating revenues (16.99%) and freight revenue (17.06%), in net investment (16.60%), and in number of employees (17.23%). BN retained first place in net railway operating income (26.24%), but Norfolk Southern was first in ordinary (net) income (27.35%).

1985 spenders: How they ranked

1. Burlington Northern . . .	\$678,613,000
2. Seaboard	595,723,000
3. Conrail	513,250,000
4. Santa Fe	414,452,000
5. Missouri Pacific	382,569,000
6. Norfolk & Western	327,000,000
7. Southern	318,000,000
8. Southern Pacific	252,092,000
9. Union Pacific	235,951,000
10. Chesapeake & Ohio	157,286,000
11. Baltimore & Ohio	113,696,000
12. Western Pacific	79,380,000
13. Illinois Central Gulf	73,872,000
14. Chicago & North Western	66,750,000
15. Kansas City Southern	41,517,000
16. St. Louis Southwestern	37,688,000
17. Missouri-Kansas-Texas	23,980,000
18. Denver & Rio Grande	23,708,000
19. Delaware & Hudson	22,415,000
20. Soo Line	21,403,000
21. Grand Trunk Western	20,806,000
22. Florida East Coast	16,165,000
23. Elgin, Joliet & Eastern	4,304,000
24. Boston & Maine	2,167,000

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Lines on Labor

How railroads trim layers of management fat

Organized labor is not always its own worst enemy—just sometimes. There is, for example, the case of United Airlines pilots, who couldn't reach agreement with management on how to handle wage scales for pilots at Frontier, an airline United wanted to buy. United told Frontier's parent "No deal," Frontier ceased operations and went into Chapter 11. Thousands of jobs were lost.



GUS WELTY

There is, for example, the case of the rail unions' battle against the short line regional-railroad movement. With non-union operation or with substantial concessions from employees who are organized, these smaller railroads can restore economic vitality to lines that larger railroads saw as unmitigated losers, mainly because of labor costs and work rule restrictions on operations. This short line regional movement is preserving service, preserving jobs. Many, perhaps most, employees of the big road are picked up by the smaller road when the transfer takes place. But labor wants New York Dock and Oregon Short Line protective provisions attached, provisions that would guarantee up to six years' full wages to every employee affected by the transfer (RA, September, p. 20).

For some reason, these sunk-in-concrete labor positions bring to mind the situation facing other thousands of railroad employees—those in management who see their employers eagerly embracing one or another buyout strategies.

There are sound reasons for a company to start a buyout program. Under regulation and sometimes through mergers, many railroads got fat and stayed that way. Under deregulation, the fat has become too much to carry. Attrition isn't fast enough, and so the buyout is the logical approach.

It's safe to say that no two buyout programs are exactly alike. It's also safe to

say that none, not a one, follows the New York Dock-Oregon Short Line pattern, something which labor might do well to note. Often as not, managerial buyout payments are measured by the month, not the year.

Some programs are almost brutally direct—the well-known "offer you can't refuse." Some are a bit more subtle, with the offer open across-the-board or almost so, and with management reserving the right to keep the people it really wants to keep. (What happens if somebody whom management wants to drop doesn't bite? "Well," as one top manager puts it, "when a new organization chart starts getting around and your job isn't on it, that's a pretty strong hint.")

But then, what happens to the people who are bought-out? Where do they go? What do they do?

Some older managers, those who have put a few bucks away, simply retire. Younger managers, however, have a problem. More today than a few years ago, railroad managerial skills are transferrable to other industries—the catch being in finding another industry that's hiring. Managers with genuine marketing and logistics skills will probably fare best; logistics experts in particular seem to be in short supply.

How about becoming a consultant? Never mind that the world sometimes seems loaded with retired-railroaders-turned-consultants, opportunities do exist, as companies pare staff costs and contract for what they need as they need it on the outside. But consulting is not an easy life. Multiple lines have to be con-

stantly out—and as one consultant once put it with respect to a particular prospective client, "I keep baiting the hook, but the damn worm keeps falling off."

Generous buyouts, those that are perceived to be fair, can go smoothly. Buyouts that are brutal can lead to lawsuits, and have.

And yes, perhaps another point might be made. Staff reductions that have as their sole purpose cost-cutting are short-sighted staff reductions. Staff reductions that go in tandem with a reduction in layers of management are the ones that will work, the ones that will both cut costs and improve efficiency.

What's happened in Burlington Northern's marketing department is a prime example of the latter. Today, there are only two or three layers between individual market manager and chief executive officer. Bill Greenwood, who heads the department, puts it simply. The trimmer and flatter an organization chart gets, he believes, the quicker and better the decisions become, and this is a key to developing a strong customer-focus. Conversely, he says, the more layers of management there are, the greater is the focus inward. And Burlington Northern, Bill Greenwood declares, "has become a market-driven company."

So, the times do demand the buyout, the restructuring. Equally demanded is fairness on management's part in dealing with lives, careers, futures.

And organized labor? On its part, the demand is for recognition that "No" is no longer an adequate response—and that less can sometimes really mean more.

Class 1 railroad employment

Employee Group	No. of employees, mid-month count		Percent of change July 1986 from	
	July 1986		July 1985	June 1986
Total—all employees	279,697	d	8.27	1.23
Executives, officials and staff assistants	13,155	d	3.99	d 1.02
Professional and administrative	50,429	d	11.76	d .63
Maintenance of way and structures	62,374	d	6.21	5.80
Maintenance of equipment and stores ..	50,802	d	8.05	d .47
Transportation (other than train and engine)	18,038	d	9.87	d .56
Transportation (train and engine)	84,899	d	8.02	.91

Source: ICC

Trailer Train board rejects sale proposal, declares a dividend

Those who say "Let Trailer Train be Trailer Train" can flash a victory sign, at least for now.

For some time, it appeared that Trailer Train, essentially railroad-owned since its inception, might be sold in some fashion. As recently as a month ago, about two-thirds of the ownership was interested in a sale. But it became evident that nobody was interested in buying, with such a sizeable minority not interested in selling.

And so on Sept. 11, Trailer Train directors voted—by a wide margin—to maintain the status quo.

At the same time, the directors also voted in favor of the company's declaring another dividend, which would be the second in TT's history. A \$19-million dividend was declared last April, and the amount of additional dividend to be declared for 1986 was to be decided at another board meeting which was scheduled for Oct. 2.

Trailer Train is in good financial condition, with liabilities from its ventures into boxcar and gondola ownership made manageable by present management. Its capital-spending programs for 1984-86 have been at a relatively high level, and its '86 program has been expanded (*RA*, September, p. 23). But those programs came after several years, 1981-83, of modest spending. And the recent expenditures have served owning-lines well in terms of upgrading both the technology and the supply of intermodal and auto-rack cars.

At the same time, Trailer Train has continued to operate more as a service company than as a company primarily interested in profit. Emphasis has been on maintaining an adequate supply of technologically up-to-date equipment and on streamlining operations to keep lease rates low. Over the past two years, rates have been reduced by 17%. A rate increase may now be needed, depending upon the dividend level that was to be set Oct. 2.

Trailer Train has 37 directors; a number of major roads have multiple directorships, for the most part reflecting merger of owner-lines.

Return on investment drops below 4%

For the 12 months ended June 30, the railroads' rate of return on net investment dropped to 3.97%, a full percentage point below the return reported for the corresponding period a year earlier.

During the quarter that ended June 30, net revenue from operations dropped to \$524 million, down 43.4% from second quarter 1985. For the first six months of this year, net revenue from operations was \$1.184 billion, a drop of 23.4% from the comparable 1985 period.

Due to write-downs taken by Burlington Northern and Union Pacific, the industry's second quarter ordinary (net) income dropped by 95%, to \$31 million, compared with \$632 million in the second quarter of 1985. Without these write-downs, which accounted for \$537 million of the \$601-million decrease, ordinary income would have dropped \$64 million, or 10.1%. For the first half of 1986, ordinary income amounted to \$435 million, down 57.8% from the 1985 period.

Class I Railroads in the United States For the First Six Months

	1986 (millions)	1985 (millions)
Operating revenues	\$13,341	\$14,180
Operating expenses	12,157	12,634
Net revenue from operations		
United States	1,184	1,546
Eastern District ¹	920	868
Western District	264	678
Rate of return on net investment ²	3.97%	4.97%
Ordinary income		
United States	435	1,034
Eastern District ¹	606	618
Western District	(def.) 173	415

For the Second Quarter

Operating revenues	\$6,641	\$7,100
Operating expenses	6,117	6,174
Net revenue from operations		
United States	524	926
Eastern District ¹	543	542
Western District	(def.) 19	384
Net railway operating income	705	645
Ordinary income		
United States	31	632
Eastern District	371	386
Western District	(def.) 340	246

¹ Eastern District includes what was formerly the Eastern and Southern Districts.

² Rate of return for the 12 months ended June 30, 1986.

(def.) - deficit

R&D: A new 5-year plan

Two years ago, it had become clear that the level of freight transportation demand in North America had become at best a static thing; that intensifying competitive pressures wouldn't diminish; that already reduced federal rail research support had more years of decline in prospect; and that supplier-funded research and development, shrunk by the lowest level of car orders in 50 years, couldn't be expected to rebound.

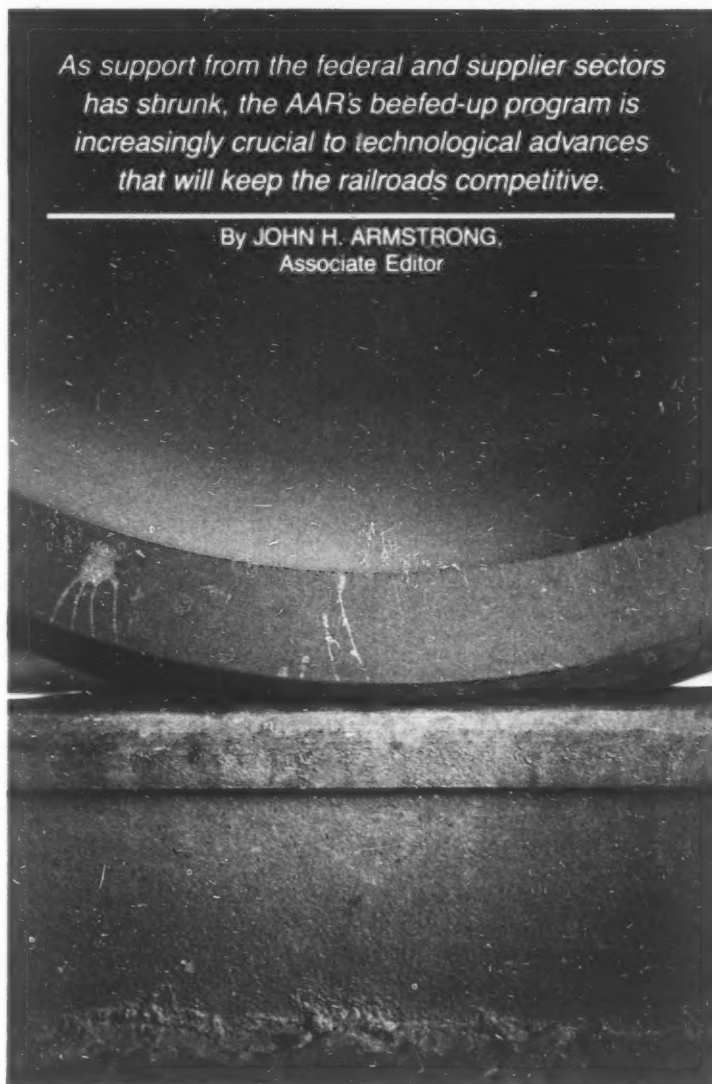
It was equally clear that the railroads must base their hopes for future financial health on carrying more of a constrained gross through to the bottom line—and that to do this they would need to generate transportation of enhanced, competitive quality at lower cost. Doing that in an industry founded from its beginnings on the strength of a specific technology means that fundamental technology must continue to be improved, even as it copes with a changing environment. How? By research. The need for a stepped-up R&D effort was apparent, and the hour late.

So it was that in 1984 the board of directors of the Association of American Railroads kicked off an expanded five-year research program by approving a first-year (1985) budget up 34% from previous levels.

Two years have now gone by, and the scheduled biennial update of the five-year plan is in hand (see box, p. 43). Preceding that stepped-up 1985 program, and reflected in the distribution of work within it, was the AAR's assumption of management responsibility for the Transportation Test Center at Pueblo, Col. from the Federal

As support from the federal and supplier sectors has shrunk, the AAR's beefed-up program is increasingly crucial to technological advances that will keep the railroads competitive.

By JOHN H. ARMSTRONG,
Associate Editor



Guided-wheel-on-rail technology, the very foundation of railroading, will get increased attention in the AAR's 1987-1991 program. Edward Delfers

Railroad Administration. Since mid-1983, the Center has been operated entirely by employees of the AAR's Research & Test Department.

Though slightly constrained financially during its first two years, the new AAR five-year plan calls for generally similar totals over the 1987-91 period. With FRA rail research spending—now almost entirely applied research directly concerned with safety—budgeted at less than \$10 million for 1987 (vs. \$50 million in 1981, and \$20 million in 1982), it's apparent that the AAR

portion of rail-oriented research is increasingly crucial to continuing advances in the industry's technological base. Some railroads do maintain significant research programs of their own, frequently in co-operation with the AAR and including major donations of supplies, equipment and facilities to joint test programs, but an increasing part of the rail research "establishment" is represented by the 350 AAR employees located (in a ratio of about 1:3:8) at its three facilities: Washington Systems Center (in the AAR Headquarters building); Chicago Technical Center (on the Illinois Institute of Technology campus); and the TTC (Pueblo).

Particularly disturbing in its longer-term effects is the fact that support for the more basic research in fields of rail interest, of the type formerly funded by the FRA at universities or research institutions, has essentially dried up.

• **The tools are good.** On the positive side, ingenious use is being made of some of the expensive facilities (the Vibration Test and

Roll Dynamic Units and a Simuloader brought up from a Union Tank Line lab in Texas) in the Rail Dynamics Laboratory, and the FAST and other test trackage at Pueblo. A powerful wheel/brake test dynamometer is in business at the Tech Center. With the vast increase in compact, portable data recording and on-the-spot microprocessor analysis capability now available, the efficiency of field testing is dramatically better than it was only a few years ago.

If, simply to stay in business, the rail-



Now in business at the Chicago Technical Center is a wheel brake test dynamometer moved from a U. S. Steel laboratory near Pittsburgh.

roads' need for accelerating the pace of technological progress has intensified while the resources for doing this have diminished, intelligent application of every bit of capability to the problems that really matter has become crucial. Is the AAR's part of the solution—apart from considerations of size relative to need—at least well aimed by the new plan? Perhaps the best handle on that question can come from a look at the process by which it has been refined.

● **Heads in the clouds, feet in the ballast.** Particularly since a major reorganization in 1970 and the arrival of Dr. W. J. Harris—himself a chemical engineer/metallurgist with a background of Navy, Academy of Sciences and Battelle research and laboratory administration—the AAR Research & Test Department has developed a staff with solid credentials in virtually all the engineering, scientific and academic disciplines of concern to rail technology. Effective research in an industrial environment certainly includes some degree of detachment from crisis concerns, but what about potential ivory tower problems?

Administration of the program is overseen by a 22-member Research Committee, chaired by AAR Vice President (R&T) George H. Way, who succeeded Bill Harris last year. Individual members, from large and not-so-large member railroads in ap-

proximately the same distribution as on the board of directors of the AAR itself, are typically the senior officers directly responsible for searching out, developing, and applying new technology on their properties—endeavoring to cope with those railroad problems technical and broad enough to suggest that research should help. Given the typical diversity of railroad organization charts at the upper levels, individual responsibilities represented on the committee extend beyond engineering, mechanical, and system analysis to include transportation operations, marketing, and executive functions.

Many line items in the AAR research program—such as those connected with the long-standing Track-Train Dynamics Program with its international governmental and supplier sponsorship—involve some degree of support and concern from organizations outside R&T, as recognized in the membership of steering committees or task forces overseeing specific programs or projects. In the case of the Freight Car and Train Equipment program, for example, the primary such entity is the Research Committee of the AAR Mechanical Division.

In the updated five-year plan, further technical input and counsel on both overall and project-by-project matters from an out-in-the-field, what-we-need-now perspec-

tive came from 37 R&T staff interviews of 117 officers from 14 major railroads.

If the research program has its ivory-tower aspects, at least the foundation is firmly rooted in the subgrade.

● **The numbers game.** As an aid in the assessment and management of each project, a continuing economic evaluation, calculated on a standardized basis, is maintained. As illustrated in the example (see box, p. 45), research and implementation costs are subtracted from prospective industry-wide cost benefits on a whole-life, discounted basis to generate an estimate of the after-tax net present value of the work represented.

Almost by definition, the success of an applied research project is less than a sure thing. Expected answers may not be found, or solutions may not work out in practice. Accordingly, benefits are reduced by factors—ranging upward from 45% among the projects in the current program—reflecting the probability of research success (that is, producing a useful, workable product) and then by the probable degree of implementation (the proportion of the industry making use of the fruits of the project). Timeliness is addressed by phasing in benefits in terms of cash flow realized year by year as implementation proceeds.

The sum has to be somewhat less than the whole of the parts; to the degree that technically-successful projects may fix the same problem—adopting an optimized wheel-tread contour could reduce benefits from grinding railheads to a scientifically-chosen contour, for example—the savings are not additive. Subject to this caveat, the total for the plan's projects is a substantial \$6 billion.

Also of interest are the benefit/cost ratios that can be derived from these figures:

—*Research cost ratio* is the net dollar savings over the useful life of the "product" for each dollar invested in research. This is typically a big number, ranging up into the hundreds for some "knowledge" tasks with little hardware costs and averaging 109 to 1 for the program as a whole.

—*Total benefit/total cost ratio* divides gross savings by the sum of research and implementation costs—those capital and operational expenditures necessary to put the results to work on the railroad. A much smaller number for projects such as the High-Productivity Integral Train Project (HPIT), which can only be implemented by making major capital investment—but also typically for those of high net present value—this still comes in at 5 to 1 for the current program.

Obviously limited in precision by the

AAR research's 1987-91 plan—Continuity, with some shifts

In the planning cycle instituted in 1982, a five-year plan is updated every second year. To portray the major technical thrusts and anticipated shifts in emphasis within the overall AAR research program during the 1987-91 period of the current update, allocations for the eight technical programs are shown for 1986 and for the third and fifth years of the new plan:

Program Subprogram/Project	Annual Allocation (\$, thousands)		
	1986	1989	1991
Energy	3,267	2,006	930
Diesel fuel specifications			
Diesel engine improvements			
Locomotive component efficiency			
Aerodynamics			
Vehicle/track resistance			
Wheel/rail lubrication			
Energy cost modeling			
Fuel measurement instrumentation			
Freight car and train equipment	3,529	3,326	3,579
Car structures			
Brake systems			
Wheel thermal			
Truck performance			
High productivity integral train			
Freight car maintenance cost data base			
Freight car certification			
Certification tests			
Mechanical division standards			
High performance covered hopper			
Track and structures	1,235	2,739	3,729
Track performance			
Rail metallurgy and performance			
Alternate track structures			
Track maintenance planning and costing			
Track failure detection			
Bridges			
Maintenance procedures			
Turnout performance			
Engineering test support			
Engineering committee support			
Vehicle track systems	1,641	3,146	3,546
Track characterization/vehicle response			
Derailment analysis			
Train operations/derailment simulation			
Wheel/rail life			
Wheel/rail profile			
Heavy axle loads			

Relationship of mechanical & track standards
Wayside/on-board detection
Track train dynamics implementation
Coordinated committee support

Train control technology	704	300	300
Advanced train control systems			
Communication & signal technology assessments			
Environment, safety and productivity	855	1,318	1,323
Employee safety			
Train safety			
Occupational health			
Environment			
Tank car safety			
Hazardous materials			
Hazmat training			
Nuclear waste transportation			
Regulatory analyses			
Freight equipment management	822	924	959
Industrywide car management			
Inter-railroad pooling			
Private car utilization			
Intermodal equipment management			
Car management aids/service planning model			
Motive power management			
Washington computer support			
Technology assessment and engineering economics	434	624	629
Technology implementation			
Advanced technology assessment			
Affiliated laboratories: general funding			
Transportation research board			
International liaison			
Project technical evaluation			
Project economic evaluation			
Facilities and equipment	2,756	3,110	3,060
Operations and management	1,896	1,947	1,947
	17,140	19,443	19,002

These figures do not include research work conducted on contract for suppliers, railroads or government agencies by the AAR at its Pueblo, Chicago and Washington facilities nor the value of material, equipment and services provided or contributed in kind in joint support of programs, typically amounting to \$20-25 million per year.

uncertainties within both numerator and denominator, these totals and ratios aren't recommended for making close comparisons among competing projects; but their calculation does tend to insure that all applicable costs and benefits are recognized, that problems addressed are costly enough to support a practical level of research effort, and that all available hard data is factored in. Once available, the analyses can readily be recast to examine such ever-arising questions as the effects of

changes in tax laws or the cost of capital in relation to fuel prices.

• **Does it ever end?** What are the "deliverables" of research? With so many of their reports concluding with recommendations for additional work, it's easy to question the reality of the fruits of the endeavors of research's practitioners. Do projects ever come to a useful conclusion?

In the new five-year plan, research budgeting for some major items—including the ATCS project, programmed to become self-

sustaining with the implementation of its performance specifications a matter of competitive supplier development—phases out within the period.

An aerodynamics project also promises to taper off in classic fashion. First, it is expected that a body of knowledge—including position-in-train, cross-wind and drag coefficient data—will be generated on a spectrum of generic shapes broad enough to encompass foreseeable future rolling stock design and operational planning

needs. After all, cars can be only so long, so wide and about so lumpy. Secondly (as is already being demonstrated in several other projects throughout the research program), this data and expertise will be wrapped up into software programs so neatly that the engineer with a PC can knock out his own aerodynamically-optimized answers.

In balancing differing opinions regarding the relative value and appropriateness of short- vs. long-term research, a stated goal in the selection and phasing of AAR research is that even long-term projects be structured to produce usable products within three to five years.

● **Steady as you go.** It's apparent from the 63 separate items in the five-year plan—many of which contemplate completing or making progress on more than one phase of the problem within the five-year period—that rail technology is not a simple business

and there is a lot going on. All we can do is look at major trends and a very few examples.

Overall, the new program, based on maintaining a program at about the level of the new-plateau plans of 1985 and 1986, significantly expands research in track and vehicle-track technology and some safety programs, primarily as permitted by a phasing down of the energy program. The latter shift, certainly to some degree associated with the current price of diesel fuel, results more directly from the anticipated successful completion of landmark programs in measuring and reducing vehicle/track and aerodynamic resistance.

Interestingly, two of the programs tagged for expansion in the new plan do propose to raise efficiency by sprucing up the guided-wheel-on-rail technology that is and always has been the foundation of railroading it-

self. With the new levels of measurement, test and analytical capability available, the consensus is that a push for improved track and wheel design, material and maintenance standards and further understanding of the dynamics of their interrelation in train consists is not only the next order of business in safety but in the search for sizeable increases in efficiency as well.

● **Wheel on rail—and ramifications.**

Traditionally, major increases in efficiency have come about through increased axle loads—doing the job with fewer, bigger cars. Traditionally, also, the transition has been made only to the accompaniment of side effects in the life and serviceability of car and track components so painful as to cast doubt on the value of the trade-off.

Unlikely as such a thing may have seemed at the time of the first five-year plan revision when problems laid at the door of

Research project economic analysis—an example

As a representative example of the application of a variety of available data in support of the on-going calculation of prospective benefit/cost relationships for a specific research project, the AAR economic analysis staff suggests this item, an analysis of the first item in a phased development project included in the current five-year plan as part of the Vehicle Track Systems Program:

Wayside/on board detectors

Objective: To determine the reasons for the increase in the rate of roller-bearing failure and to optimize the methods of detecting incipient bearing failure.

Benefits: Reductions in train delays from stops due to erroneous hot box detections and reductions in derailments caused by true bearing failures. Delays have an economic cost for unproductive time for equipment and labor (FRA estimate: \$165 per train hour). The total number of delays industry-wide is unknown; statistics from a small sample of railroads (including statistics on the performance of three types of detectors) extrapolate to a total of 145,000 delays annually, estimated up to 40% from false readings, stopping trains for an average of 25 minutes, for a total of \$4.2 million in delay costs.

Bearing-related accidents cost the industry \$56.7 million annually (4 year average, factored to include under-reporting and as-

sociated non-reportable costs).

Assumptions: On the basis of project manager assessment of project plans and prospects at its current (early) stage, the analysis is based on the following assumptions:

1. Improved detection device will eliminate false hot box indications.
2. Approximately 2,400 hot box detectors in the industry.
3. Improved detection device will reduce

cost for accidents caused by true bearing failures by 60%.

4. Capital cost of \$5,000 per detector (addition to cost of current device). No increase in number of detectors or operating costs.
5. Probability of research success is 70%.
6. Probability of implementation success is 90%.
7. Implementation will begin in 1989 and continue for 6 years.

Project economic analysis

Undiscounted cash flows:
(\$, thousands)

Year	Research Expense	Implementation Operating	Costs Capital	Industry Savings
1985	0	0	0	0
1986	58	0	0	0
1987	303	0	0	0
1988	328	0	0	0
1989	288	0	1,265	3,981
1990	238	0	1,265	7,962
1991	248	0	1,265	11,944
1992	0	0	1,265	15,926
1993	0	0	1,265	19,907
1994	0	0	1,265	23,889
1995-2000	0	0	0	23,889/yr.
Totals	1,463	0	7,592	226,942
After-tax				
Present value:	620	0	2,608	57,910
Net present value:				54,682

the 100-ton car were vividly in mind, the largest single allocation in the new plan for the year 1991 is for the Heavy Axle Load project, including validation on the FAST high-tonnage loop of the predicted effects (and resulting economic trade-offs) of axle loads well above the 66,000 pound level. This time around, the stress and dynamic analyses, lab data and system economic models—and even the user-friendly computer programs—allowing a railroad to decide beforehand when, if and by how much it may profitably raise the limits on any of its routes should be available.

Also phased for timely availability are reexaminations (under various programs) of the relationships among time-honored mechanical, engineering and material standards and specifications in the light of more current understanding of track/train interactions—geometry, dynamics, fatigue. Resulting rationalizations (or reaffirmations) in such matters as wheel contour, flat-wheel condemning limits and track geometry limits may well look small; anticipated improvements in everything from train resistance and fuel consumption to wheel, rail and ballast life are likewise small in percentage but represent majestic annual

savings under a couple of trillion gross ton miles.

● Assessing the new technologies.

With AAR research projects deliberately oriented toward the short-term end of the continuum, does a new technology not obviously and specifically applicable to some ongoing project or within the purview of a traditional railroad supplier assuredly fall through the cracks and miss out on any chance for industry consideration? Advanced Technology Assessment is a modest continuing program intended to preclude that; within a current general interest in "smart" machines, a completed study of robotics in locomotive back-shop operations is to be followed up in future years with a look at the potential of today's state of the art in "artificial intelligence" (expert systems) in troubleshooting.

Also broadening in-house purview of the less immediate technologies is general funding made available to the technical directors of the AAR Affiliated Laboratories established at four universities (Illinois, Carnegie-Mellon, MIT, and Illinois Tech). Supplementing cooperative and contract work to maintain a modest minimum annual level of AAR work at each lab, this

also helps maintain familiarity with railroad technology and fosters quick response to AAR problems in each lab's field of specialization.

● On the output end. To do any good, the word has to reach the field. Fruits of some programs show up in the certifications, tests, directives and specifications conducted or promulgated through the AAR's other departments and organizations supported by R&T programs—in the case of the Freight Equipment Management projects, for example, in car service orders. Other research results find their way into the industry through the workings of organizations of professionals such as the Transportation Research Board, the Coordinated Mechanical Committees, and the American Railway Engineering Association.

In the case of the multi-sponsor Track Train Dynamics Program, the research program continues to support meetings of the TTD Implementation Officers designated by each railroad, a gung ho bunch whose work has made "L/V Force Ratio" a household word wherever derailments are found (and, in the process, undoubtedly prevented an impressive, if unknown, number of the same). ■

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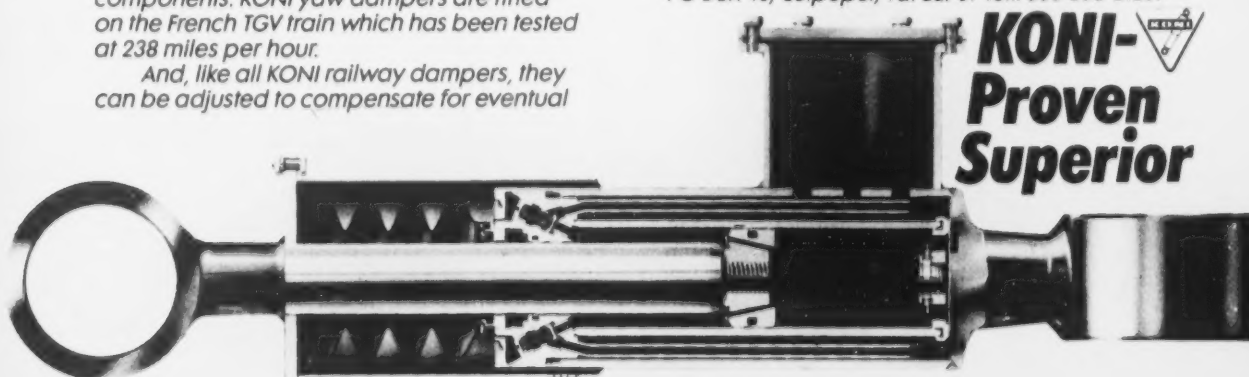
KONI's new yaw dampers are designed to control small amplitude sinusoidal rotational movements permitting extreme high speed operation while reducing wear on suspension components. KONI yaw dampers are fitted on the French TGV train which has been tested at 238 miles per hour.

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wear. Adjustability plus KONI's proven ruggedness can withstand the high forces generated by the truck's movement, guaranteeing the longest life possible.

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For information on what KONI dampers can do for you, call or write: James Vance, Senior Sales Engineer, Koni America Inc., Dept. RR, PO Box 40, Culpeper, Va. 22701 Tel.: 800-336-2120.

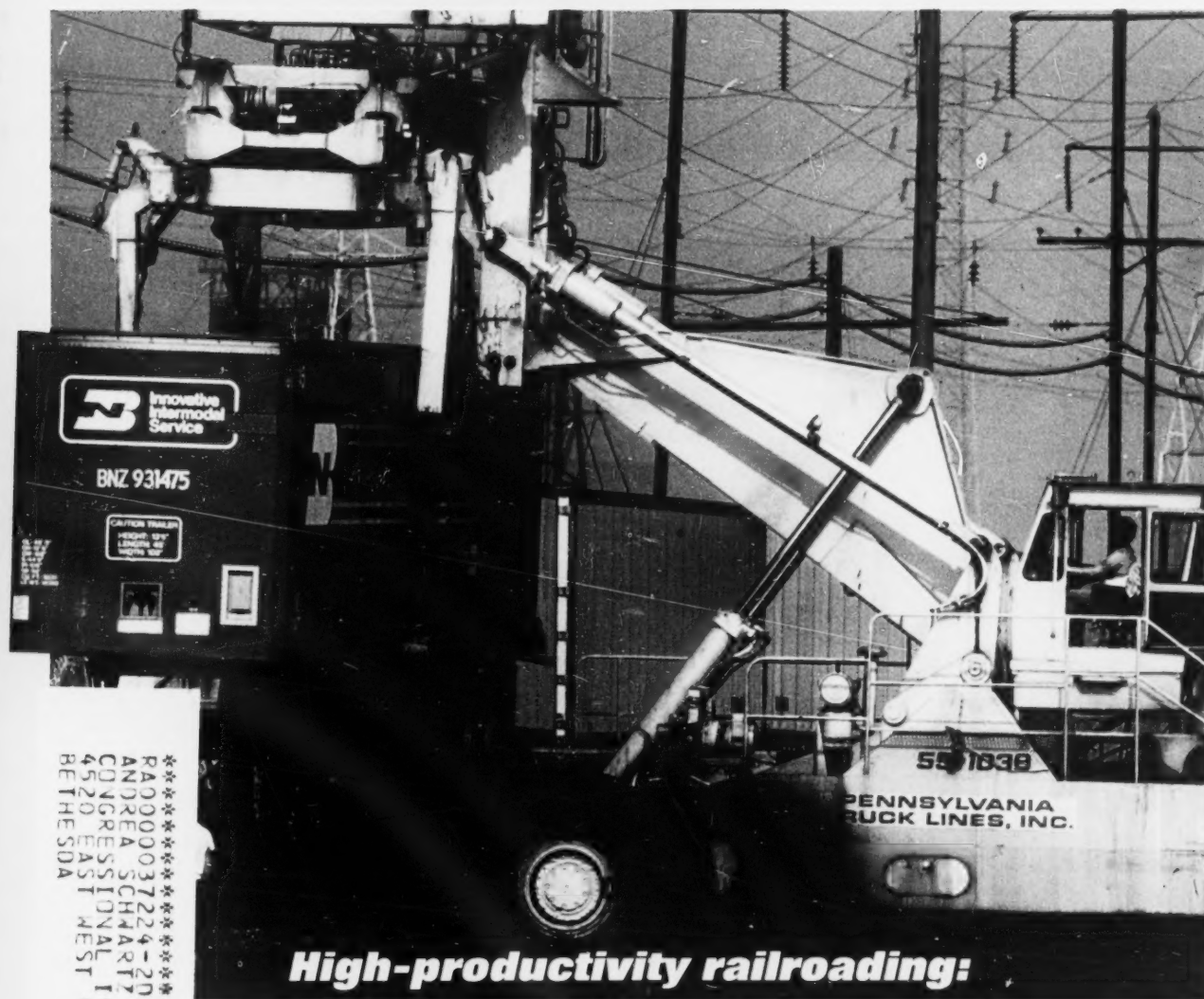


Railway Age

...for the new age of railways

November 1986

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11/26/86



High-productivity railroading:

Boosting intermodal terminal efficiency

12 guideposts on the road to short line success

How New York MTA plans to spend \$8 billion

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Railway Age

...for the new age of railways

November 1986

Features

36 High-productivity railroading: Boosting terminal efficiency

The efficient flow of trailers and containers through intermodal terminals is getting increased attention all along the line. Contract operation of terminals may be one route to improved productivity.

39 Short course on short lines

"Building a successful short line," says Consultant Robert H. Leilich, "begins with planning, more planning and yet more planning." He identifies 12 particularly crucial areas that need probing.

42 Anheuser-Busch: Brewing new rail markets

Hauling raw materials to the brewery is still the mainstay of the Manufacturers Railroad. But this short line, and three car shops in A-B's transportation group, are seeking and finding new business.

45 PLM discovers the ATV

All-terrain vehicles are cutting costs and improving efficiency at a 181-acre coal car maintenance and repair facility at Alliance, Neb. They're also making life easier for maintenance and repair crews.

48 Can Chicago get its transit act together?

For the first time, the Regional Transportation Authority is putting together a long-term strategic plan. It calls for rationalizing redundant routes and sprucing up those that remain.

52 New billions for NYCTA

The New York Metropolitan Transportation Authority's 1987-1991 five-year plan includes \$6.5 billion for the Transit Authority, mostly for rail improvements. A new generation of high-tech cars is planned.



Boosting intermodal terminal efficiency

New York NYCTA plans to spend \$6 billion

Conrail's Kearny, N.J. intermodal yard photographed by Kent Patterson.

Update

- 22 ICC will continue to clear the way for regional roads
- 22 Seattle gets new container terminal
- 22 Griffin opens new wheel plant
- 22 BRAC's Kilroy heads Labor Executives
- 23 Pontiac now controls all GTW operations
- 23 Gunderson keeps three lines busy
- 23 Orders placed for RoadRailers
- 23 BLE ousts Sytsma, picks new chief
- 23 B&O, C&O and CSXT will become one
- 26 SFSP prepares its reopening petition
- 26 Conrail opens new Columbus terminal
- 27 C&NW offers buyout to 2,000 employees
- 27 Miner merges three divisions
- 28 CP cuts track costs with hi-rail fleet

- 29 Success breeds new "Expeditors"
- 29 SAB Nife acquires Edison Battery
- 30 "BN News" tops awards list
- 30 Conrail and CSX cut scrap paper rates
- 31 Exhibitors sign up for Intermodal Expo
- 31 Thermo King invests \$4 million in R&D
- 32 CSX opens Jacksonville intermodal terminal
- 32 C&NW wins new Powder River move
- 47 Amtrak expands Metroliner service
- 47 Portland's MAX exceeds forecasts
- 47 Search widens for dual-mode power
- 47 M-K opens new traction-motor plant
- 47 Rail seen as answer to "airborne gridlock"
- 47 DART picks new management team
- 47 Track goes in for Guadalupe line

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on Labor
- 46 In Transit
- 66 Publisher's Perspective

Departments

- 8 Meetings
- 11 Letters
- 13 Industry Outlook
- 14 Market Outlook
- 56 People in the News
- 58 Products
- 61 Literature
- 65 100 Years Ago

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Market Outlook

Equipment

Novacor Chemicals Ltd.: Has installed four W. R. Stamler Corp. railroad car spotters at its polyethylene production plant in Joffre, Alta. The car spotters automatically position hopper cars of various sizes in Novacor's washing and loading operations. Two car spotters, mounted on the same track, push cars into and out of a wash building; the two other car spotters then position car strings in two separate gravity loading operations.

PATH: Awarded a \$1,042,000 contract to TLT-Babcock, Inc., for the design and supply of tunnel ventilation fans for a new tunnel emergency ventilation building in Jersey City.

Pullman Leasing Co.: Is taking delivery of 200 5,850-cubic-foot-capacity covered hopper cars for plastic resin service. The cars feature a fully-rounded roof line silhouette, which increases strength while it eliminates carlines and permits unobstructed clearance in loading with a centrifugal spreader; the cars are also equipped with a new venting system, a new plastic hatch cover utilizing PL's simplified Sur-Latch, and a newly-designed Micro-Matic discharge gate.

Southeastern Pennsylvania Transportation Authority: Has invited bids, due Dec. 19, for the supply of 26 A.C.-propulsion cars for service on SEPTA's Philadelphia & Western line. SEPTA has budgeted \$25 million for the program. Bids are expected from builders in Europe, Canada, and Japan.

Facilities

Chicago & North Western: Global One, C&NW's \$33-million double-stack container handling facility on Chicago's west side, is scheduled for completion in December. Financing of the facility was arranged by the CIT Group/Capital Financing, an operating company of the CIT Group, which is a subsidiary of Manufacturers Hanover Corp.

Kawasaki & Nissho Iwai: Conducted the grand opening Oct. 22 of a new railcar manufacturing facility at the Port Authority Industrial Park, Yonkers, N.Y., where 95 cars are being assembled for PATH. The 150,000-square-foot facility employs 150 people, including workers from the Otis Elevator plant that formerly occupied the site.

Revenue freight carloadings

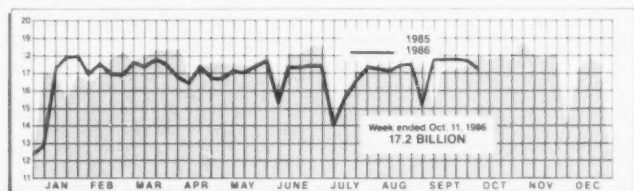
Commodity	Oct. 11 week	Oct. 4 week	Sept. 27 week	Sept. 20 week
Grain	29,950	30,079	28,661	30,179
Other farm products	4,649	3,896	3,518	3,786
Metallic ores	16,148	14,024	16,665	14,208
Coal	108,720	111,761	114,816	116,684
Crushed stone, gravel and sand	14,054	14,644	15,131	15,240
Nonmetallic minerals	8,273	8,912	8,356	9,837
Grain mill products	11,379	10,555	10,448	10,890
Food and kindred products	11,344	11,372	11,265	11,128
Primary forest products	10,275	10,424	10,497	10,479
Lumber and wood products except furniture	7,539	7,872	8,430	8,063
Pulp, paper and allied products	12,371	12,273	12,037	12,372
Chemicals and allied products	22,723	23,954	24,298	25,103
Petroleum products	4,807	4,401	4,544	4,473
Stone, clay and glass products	10,339	10,369	10,913	10,699
Coke	3,726	4,066	3,939	3,572
Metals and products	7,428	7,920	8,055	7,223
Motor vehicles and equipment	19,540	20,192	20,390	20,401
Waste and scrap materials	7,689	7,597	7,929	8,164
Forwarder and shipper assn. traffic	3,375	3,899	3,650	3,389
All other carloads	73,819	74,189	72,900	72,628
LCL traffic	121	117	120	111
Total Cars Loaded	388,269	392,516	396,562	398,629
% change from previous year	(1.6)	(0.6)	0.0*	0.0*
Estimated revenue ton-miles (billions)	17.2	17.6	17.7	17.7
% change from previous year	0.1	1.5	5.8	3.0
Total:		1986	1985	% change
41 weeks		694.2	694.3	(0.0)*

*Difference is less than 0.01%

Piggyback loadings

	Oct. 4 week	Sept. 27 week	Sept. 20 week	Sept. 13 week
Trailers/containers	105,159	106,007	105,286	101,715
Cumulative total, 40 weeks				
Trailers/containers		3,800,225		9.0
% change from 1985				

Rail freight traffic trends



Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	September 1986	9 months 1986	1985	September 1986	9 months 1986	1985	Oct. 1, 1986	Average Backlog 1986	1985
Built new by carbuilders	1,134	7,536	8,666	1,096	9,441	6,855	3,664	3,640	3,906
Built new in RR shops	0	0	406	0	0	0	0	0	0
Built new—total	1,134	7,536	9,072	1,096	9,441	6,855	3,664	3,640	3,906
Rebuilt	25	75	0	0	75	0	0	0	0
TOTAL	1,159	7,611	9,072	1,096	9,516	6,855	3,664	3,640	3,906
Locomotives (new and rebuilt)				Not available at press time					

Source: American Railway Car Institute

Lines on Labor

C&NW supervisors: "Leaders of men— not policemen"

It should come as small surprise to anyone, to learn that the traditional, time-honored railroad discipline system is perhaps the greatest cause of friction between employee and supervisor, between union representative and manager. Traditional and time-honored, the system may be. It is also out-of-date and out-of-step, not always effective and sometimes unfair.



GUS WELTY

But, recognizing these things and doing something about them are not the same. Chicago & North Western last year did both, and thus far, the results are looking good.

C&NW's principal officer is the son of the late Doc Wolfe, who truly deserved the adjective "legendary" in front of his name for his years as the railroad industry's chief labor negotiator. Jim Wolfe is himself a former vice president-labor relations at North Western. The incumbent, Ron Kuchna, has a tough act to follow; it's always tough when your boss once held the job you hold, especially when times have changed some since he held it.

But never mind that. A year and a half or more ago, C&NW decided to change the way it was managed, in ways that would let managers be managers. There was a need, of course, to convince employees that this was a serious effort to upgrade the way the railroad was run, to the benefit of everybody cashing a paycheck.

There were those in management, especially J.A. Zito, senior vice president-operating, as well as a lot of people in the labor organizations, who thought that there had to be a better way of handling discipline. What they were saying was that the existing system was destructive, that it was killing initiative, that it had created an atmosphere of

fear, that it involved punishments that didn't always fit the crimes. The system was rigid, allowing for little or no discretion in its application: An employee with a 20-year record of good performance could make an error in judgment, an honest mistake, and get set down for 15 or 30 or 45 or 60 days.

Here's a guy suddenly sitting at home. The neighbors ask him if he's on vacation. He tells them, as he's told his wife and kids, that he's been suspended. And they all say, Hey, you've been telling us what a great company you work for, and they do this to you? C'mon.

So, then, maybe, the employee's kids don't wear their C&NW baseball caps anymore, and the employee and his wife don't go shopping in their C&NW jackets anymore, and maybe the employee and his family don't say as much as they used to about the company; or maybe if they do say something, it's something different.

North Western didn't change because it's soft on sob-stories, or because management has suddenly been taken over by bleeding-heart, flaming liberals.

North Western changed because it made sense to change.

North Western still has tough discipline where it has to be tough, for example, in cases involving such things as Rule G, insubordination, that sort of thing. It is tough on repeat offenders, on those people—a tiny percentage, Jim Wolfe says—who simply will not obey the rules. But it allows managers discretion, the discretion that allows them to

get rid of the bad actors while it also allows them to counsel and if necessary warn employees whose errors are rare and not all that serious.

North Western's program has been in effect only since July 1985, so there's little more than a year to judge it by. Everyone feels it has helped safety and morale. And managers have more time to manage because they're having to spend less time preparing for and then conducting the formal investigations that are the hand-maiden to traditional discipline procedures. In the year before the new policy went into effect, C&NW officers held about 2,400 formal investigations. In the year after, the total dropped to about 150.

Predictably, there were problems. Union officers, used to the old, adversarial ways, figured that management had something, unseen and unknown but dangerous, up its sleeve. Kuchna and other top C&NW people bared their arms, and the union reps have not complained since. As for supervisors, Zito told them their role in the company was to be leaders of men, not policemen. Old habits are hard to break, and the old ways of discipline were deeply ingrained. But, Zito firmly believes that first-line supervision has accepted what it is that top management wants to do.

But what North Western has done had to be done, by somebody. Just about everything else in railroading has changed. Discipline procedures, and policies, had to, too. In that area, common sense and fairness demand no less, and C&NW has apparently met the demands.

Class 1 railroad employment

Employee Group	No. of employees, mid-month count Sept. 1986	Percent of change July 1986 from	
		Sept. 1985	August 1986
Total—all employees	273,923	d 8.47	d 1.58
Executives, officials and staff assistants	12,995	d 3.67	d 2.19
Professional and administrative	49,260	d 12.21	d 1.15
Maintenance of way and structures	59,894	d 6.50	d 2.99
Maintenance of equipment and stores ..	50,195	d 7.90	d .41
Transportation (other than train and engine)	18,133	d 7.48	d 1.57
Transportation (train and engine)	83,446	d 8.80	d 1.41

Source: ICC

New billions for NYCTA

New York MTA's \$8.3-billion 1987-91 capital program includes \$6.5 billion for the city's transit system—welcome news for long-suffering straphangers and business-hungry suppliers.

By LUTHER S. MILLER, Editor

Over the next five years, New York's Metropolitan Transportation Authority proposes to spend an average of \$4.5 million a day—weekdays, weekends, and holidays—on capital improvements to its public transit system. It adds up to \$8.3 billion, and nearly all of it will go toward improving MTA's vast network of rapid transit and commuter trains, one of the world's biggest and busiest.

This is good news, of course, for the millions of New Yorkers and suburbanites who rely on the trains of the New York City Transit Authority (NYCTA) and the Long Island and Metro-North commuter railroads for transportation, primarily to and from jobs in Manhattan.

It is also good news for railroad suppliers, who have become more and more dependent on the rail transit segment of the marketplace as traditional sources of business have shrunk. New York's new five-year capital program, which follows one of equal magnitude that is still keeping production lines humming, is equivalent in dollar outlays to two years of capital spending by all of the nation's freight railroads. Not all railroad suppliers will get a piece of the New York action, but many of them will. "A railroad is a railroad, whether it runs over the prairies or under the sidewalks of New York," observes one signal supplier who estimates that the rail passenger market (transit, commuter, and Amtrak) now produces about twice as much signaling business as the Class I freight roads.

● **Big bucks for NYCTA.** The New York City Transit Authority, which carries three-quarters of the 6.4 million riders that MTA moves on an average weekday, will get nearly \$6.5 billion under the new five-year plan (provided the New York Legislature, as expected, approves it this month).

NYCTA's biggest single expenditure will be for rolling stock—more than \$1 billion for overhauling older cars in the existing fleet, completing a rehabilitation program that was started under the prior program and is now about half-way finished; and \$280.3 million for new cars. NYCTA is expected to move quickly, once

New York City Transit Authority 1987-1991 Capital Program						
(\$ Millions)						
CATEGORY	COMMITMENT YEAR					TOTAL
	1987	1988	1989	1990	1991	
Cars	\$280.3	\$0.0	\$0.0	\$0.0	\$0.0	\$280.3
Car Rehab	411.9	347.2	243.6	38.1	34.4	1075.2
Buses	42.8	32.5	29.5	31.0	61.0	196.8
Stations	42.4	155.8	72.7	125.5	54.5	450.9
Track	195.7	96.1	166.1	139.4	108.0	705.3
Line Equipment	80.7	49.7	86.7	64.8	73.4	355.3
Line Structures	63.0	68.1	133.5	83.9	102.2	450.7
Signals & Comm	72.5	165.8	190.7	152.7	93.9	675.6
Power	65.2	73.2	103.0	62.5	42.6	346.5
Shops	46.3	106.6	108.2	50.2	12.8	324.1
Yards	15.8	24.1	99.5	95.3	84.6	319.3
Depots	124.1	183.4	102.5	66.2	76.7	552.9
Service Vehicles	14.9	9.2	7.7	5.2	0.0	37.0
Security	8.9	0.0	0.0	0.0	0.0	8.9
New Routes	32.0	13.3	0.0	25.0	0.0	70.3
Miscellaneous	101.5	88.0	94.0	118.3	173.6	575.4
SIIRTOA	36.6	11.1	6.3	4.6	2.4	61.0
TOTAL	\$1,634.6	\$1,424.1	\$1,444.6	\$1,062.7	\$920.1	\$6,485.5

funding is assured, to order 200 additional R-68 cars from Westinghouse-Amrail, on top of the 400 already ordered from that French-American joint venture. (Altogether, NYCTA ordered 1,575 new cars during the 1982-1986 program, and these are now being delivered.)

During the life of the 1987-1991 program, which will begin officially Jan. 1, NYCTA will begin work on a new generation of advanced technology (e.g., A.C. propulsion) cars. The plan is to have three suppliers each produce an eight-car trainset of prototypes by thoroughly rehabilitating and installing new equipment on older NYCTA cars. An initial meeting with prospective contractors has already been held. Enthusiasm among suppliers for the way NYCTA proposes to proceed is not universal. One who has decided not to enter the contest complains that the \$235,000 per car that NYCTA will make available for the project is too little. But the long-term stakes are sufficiently attractive—ongoing orders for an estimated 200 or more cars a year—that the project is likely to find no shortage of takers among bigger companies that can

afford the risk, especially those based in countries with strong export policies.

While buses won't be short-changed, they will require only a modest share of total equipment expenditures, around \$197 million.

About 39% of NYCTA's outlays will be for infrastructure improvements. Major rehabilitation is planned for the Lexington Avenue, 8th Avenue (south of 59th Street), Broadway/7th Avenue, Broadway/Jamaica, and Myrtle, Astoria, Concourse and Brighton lines.

For signals and communications, more than \$675 million is budgeted over the five-year period.

Station improvements will be another big-ticket item, adding up to \$451 million. An automatic fare collection program, now under pilot test at 80 control areas, will go into system-wide design and construction during the new program.

Shops and yards will get a total of \$872 million. Major rehabilitation is scheduled for the 207th Street overhaul shop and the East New York and Pitkin maintenance shops. There's money for yard expansion,

NYCTA's new cars (like this Kawasaki R-62 operating on the IRT Lexington Avenue line) are averaging 50,000 miles between failures, compared with 10,000 miles for the cars they replaced.



but few plans at this time due to lack of space at existing facilities. Until new yard locations can be identified, NYCTA acknowledges, some new and overhauled cars will probably have to be stored on the right-of-way.

Only \$70 million is allocated for new routes, but it's a key allocation because it will go primarily to complete projects that have long been stalled. It calls for the completion in 1987 of NYCTA's Archer Avenue extension, and in 1988 of the controversial 63rd Street tunnel. There's also a \$25 million item in the budget for design work on a proposed new tunnel in Queens.

● **Back from the brink.** The story behind this massive, ongoing program is vividly capsulized in a just-published MTA document that describes the challenge, the response so far, and what remains to be done:

"Every weekday morning, public transportation gets 83% of the work force to their jobs in the region's hub. The Metropolitan Transportation Authority—parent company of the New York City Transit Authority, Long Island Rail Road, and Metro-North

Commuter Railroad—carries most of these people. In fact, the MTA moves two-thirds of the nation's rail commuters.

"Yet, in the years when the metropolitan region was solidifying its position as the nation's center of finance, culture, and tourism, its mass transit network chronically received less than 30% of the capital needed to keep it running. By 1980 the system was in a state of desperate disrepair.

"That year, newspapers reported that a third of the city's subway cars were out of service. In 1981, the TA's car fleet averaged only 6,640 miles between breakdowns—compared with about 35,000 miles in the mid-1960s. Equipment on the commuter railroads that run east and north from the city was often little better. A commuter council claimed that on-time performance on the Upper Harlem averaged 68% in the morning rush. On the LIRR, air conditioning failed so often that conductors were issued door wedges to help ventilate moving cars.

"In 1981 the New York State Legislature declared a 'transportation emergency,' and approved the MTA's first five-year capital

program. Although the Legislature recognized that the system's needs were 'far in excess of the funds being authorized,' the MTA set the goal its board members knew it must reach: Rebuild mass transportation for a metropolitan economy facing the needs, and eager to reap the rewards, of the 21st century.

"Funded eventually at \$8.5 billion—using state, city, and federal assistance and drawing financing techniques from the private sector—the program became one of the largest public-works reconstruction projects in American history.

"Not surprisingly, some MTA agencies were unprepared for the sheer magnitude of the program, and there were some false starts. But then financial controls were put in place, priorities set for construction projects, personnel hired and trained, purchasing disciplines established, information services computerized. Most important, management was restructured to gain control of the work force.

"Now, in 1986, that first capital program—Phase I of MTA's long-range plan to rebuild the region's transportation net-



Rehabilitated Queens No. 7 trains are running over 90% on time despite rebuilding of NYCTA's Flushing line.

work—is coming to a close. The results are becoming evident, the need to continue is just as clear. Phase II, budgeted at \$8.3 billion for 1987-1991, will secure the investment already made and extend to every resident of the region benefits that today are available only to some."

• **The story so far.** NYCTA received

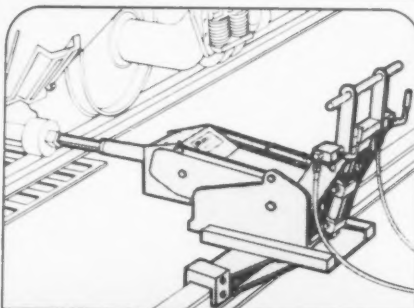
nearly \$6 billion of the Phase I capital funds. By that time it was clear to MTA management that money alone was not the answer to the underlying problems of the subway system, whose capital plant—estimated to be worth \$55 billion on the accounting books—was producing an appalling return on the bottom lines of reliability

and rider comfort.

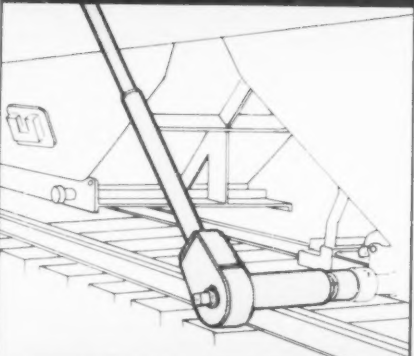
With more than 50,000 employees, NYCTA had only 300 operating managers. The situation was particularly bad in the Track and Structures department, where, according to MTA, a work force of over 5,000 included only 11 managers "who could be hired or fired by the TA's president, and none of these had a college education or professional registration." Amateur hour meant, among other things, that less than one-fourth of the system's track was getting its mandated twice-a-week inspection.

As a measure of how much things have changed, that same department today has 165 line managers and every foot of main-line track is now inspected twice a week. Meanwhile, with Phase I capital money, 60 miles of track a year has been rebuilt. As of September 1986, there had not been a main-line track related derailment in the prior 12 months. Not long ago, derailments were being reported at the rate of one every 18 days.

The new car and car overhaul program has produced its own quantum jump in reliability. Most of NYCTA's new cars are averaging 50,000 miles between failures—



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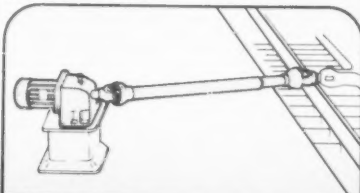
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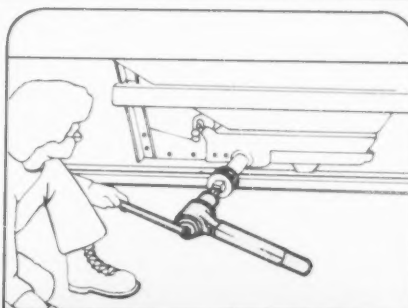
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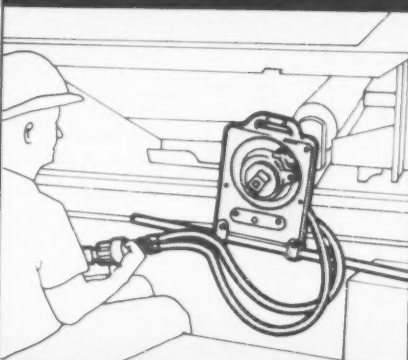
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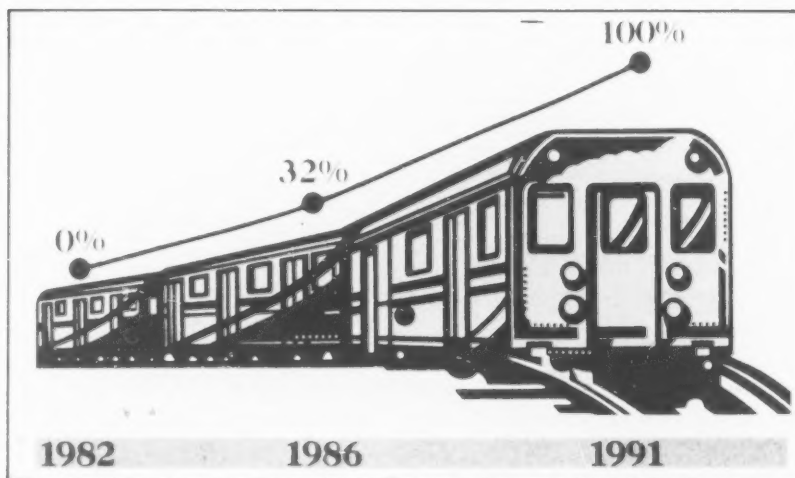
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compared with about 10,000 miles for earlier-generation cars.

Graffiti is beginning to disappear from the system. Three years ago virtually every transit car and every subway station were splashed with the graffiti artist's handiwork. As of last month, about half of the fleet of more than 6,000 cars and more than a third of TA's 463 stations were in a graffiti-free program.

The MTA's verdict, as Phase II gets under way: "The decades-long decline of the subway system has been arrested, and the long climb back has begun."

● **Closing a funding gap.** MTA's board formally approved the new, \$8.3-billion five-year plan on Oct. 1. MTA Chairman Robert R. Kiley said approximately \$5 billion of funding sources had been identified—federal and city contributions; proceeds from the sale of MTA-owned real estate in New York (the Coliseum site and the East Side Airlines Terminal); money from the Westway trade-in; surplus funds from the Municipal Assistance Corporation (M.A.C.); and a small amount of uncommitted money from the 1982-1986 plan. It will be up to the State Legislature to close the \$3.3-billion funding gap.



When the new five-year plan ends in 1991, NYCTA's fleet of nearly 6,000 cars will be all-new or rehabilitated.

Said Kiley: "The first real impact of the original five-year plan was felt in 1986, with new cars in service throughout our transit network. The pace of improvements will increase dramatically in the coming years, provided this capital plan proposal is adopted by the State Legislature.

"It would be tragic," he said, "if we

abandon our efforts midstream. The gains made by the initial investments would be lost." ■

NEXT MONTH: How the Long Island Rail Road and Metro-North Commuter Railroad plan to invest \$1.8 billion over the next five years.

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Railway Age

December 1986

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...for the new age of railways

'87 OUTLOOK



Signs of the times: a double-stack train—and a caboose—replacing end-of-train monitor.

Investment: Some capital opportunities

Fighting to stay free

**How LIRR and Metro-North
will spend \$1.8 billion**

Railway Age

...for the new age of railways

December 1986

Features

Outlook '87

31 Where will the capital dollars go?

Wrapping up a year-long series on high-productivity railroading, *Railway Age* examines some capital opportunities for high-return investment.

35 Labor issues will heat up

Elimination of the threat of secondary boycotts and finding a FELA replacement will top a busy legislative agenda.

39 Fighting to stay free

Railroads face a new struggle in the 100th Congress to keep their Staggers freedoms. Which side will labor be on?

44 "What do you say when they ask...?"

A man who's been there—AAR economist Frank Wilner—gives some pointers on explaining railroad policy positions.

Review '86

46 Earnings down, hopes high

Despite stable traffic and lower costs, revenues dropped as rates fell. But in some crucial areas, no news was good news.

49 Railroading, Jack Haley style

This regional line entrepreneur listens to his shippers and communicates with his employees. So far, the results look good.

Railway Age

'87 OUTLOOK



Investment Some capital opportunities
Fighting to stay free

Cover photo by Edward Delvers.

56 A new capital plan for Metro-North, LIRR

New York's two state-owned commuter roads are blueprinting \$1.8 billion worth of improvements under a new five-year plan.

64 CalTrain: Where are the riders?

The Peninsula Commute Service has found that it takes more than new equipment to get riders out of their automobiles.

Update

- 21 SFSP plans major rail restructuring
- 21 Galveston gets new bulk transfer facility
- 21 Santa Fe's new "Quality Service" trains target truck traffic
- 21 CSX will merge two Florida divisions
- 24 Lithcote installs closed-loop wash system
- 24 Santa Fe to open auto facility

- 24 Coal-fueled power: An assist from DOE
- 24 SP-NdeM begin direct interchange
- 27 CSX RoadRailers will roll in '87
- 27 Jacksonville facility will manage and maintain containers
- 28 Intermodal agreement covers all modes
- 28 ICC eases rules on contract disclosure
- 29 "Liberator" links SP with its customers
- 29 Dow orders first CHEM-KING hoppers
- 54 NYCTA authorizes pilot AFC projects
- 54 New Jersey approves Hudson light rail line
- 54 Busy future seen for Yonkers Works
- 54 Buffalo opens a new station
- 54 Railfone tests Chicago market

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on Labor
- 53 In Transit
- 78 Publisher's Perspective

Departments

- 8 Meetings
- 13 Industry Outlook
- 14 Market Outlook
- 60 Letters
- 66 People in the News
- 67 Track Train Dynamics Newsletter
- 70 Products
- 77 100 Years Ago

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Market Outlook

Equipment

Southeastern Pennsylvania Transportation Authority: Entered into a \$90-million (U.S.) leasing agreement with Bombardier under which SEPTA will acquire 35 new commuter cars and seven new electric locomotives, with Bombardier maintaining the equipment at a 50,000-square-foot maintenance facility to be built in the Philadelphia area. A financial institution, which had not been identified as of late November, will actually own and lease the equipment under an arrangement which Bombardier's mass transit division president, Jean-Yves Leblanc, said was consistent with "the trend toward privatization of mass transit operations in the United States." SEPTA said the equipment will be delivered by late 1987. Supply of the electric locomotives will be subcontracted to the Electro-Motive Division of General Motors.

Washington Metropolitan Area Transit Authority: Will acquire an additional 26 cars from Breda Construzioni Ferroviarie of Italy, thus exercising a fifth and final option under a 1981 contract and bringing the total number of cars ordered from Breda to 366. Westinghouse Electric will supply propulsion and automatic train control equipment. Final assembly of the cars will be performed in Beech Grove, Ind. They are scheduled to go into revenue service in 1988.

Westlake Polymers Corp.: Will lease 100 new, 5,850-cubic-foot-capacity covered hopper cars from Pullman Leasing.

Facilities

Massachusetts Bay Transportation Authority: Awarded a \$760,000 contract to Bechtel for the design of five communications subsystems: a security system consisting of intrusion alarms that report directly to MBTA's police department; a train approach announcement system; a transmission network capable of carrying all voice, data, video, and radio traffic; an emergency medical radio link for the subways and a high band radio network for fire department services; and a computer-aided dispatch system for the police department to improve response time.

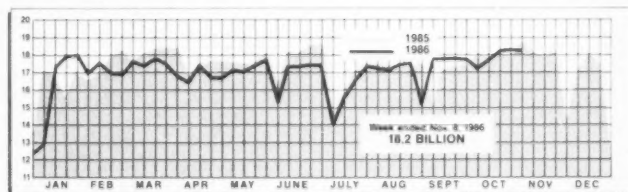
Revenue freight carloadings

Commodity	Nov. 8 week	Nov. 1 week	Oct. 25 week	Oct. 18 week
Grain	34,342	34,096	35,636	33,813
Other farm products	4,857	5,657	5,635	4,910
Metallic ores	16,672	14,960	15,480	13,526
Coal	119,102	114,929	117,318	113,945
Crushed stone, gravel and sand	14,485	14,991	14,447	14,287
Nonmetallic minerals	8,447	8,382	8,439	8,545
Grain mill products	11,270	11,368	11,455	10,809
Food and kindred products	11,848	12,072	11,667	10,819
Primary forest products	10,635	10,896	10,572	9,927
Lumber and wood products except furniture	7,457	8,167	7,727	7,606
Pulp, paper and allied products	11,779	12,665	12,274	11,708
Chemicals and allied products	23,261	24,202	23,358	22,239
Petroleum products	4,270	4,607	4,876	4,655
Stone, clay and glass products	10,253	10,652	10,517	10,422
Coke	3,865	3,907	4,304	4,011
Metals and products	7,419	7,830	7,227	7,561
Motor vehicles and equipment	21,050	21,338	20,513	19,741
Waste and scrap materials	8,114	8,066	8,011	7,666
Forwarder and shipper assn. traffic	3,346	3,434	3,403	3,287
All other carloads	74,983	75,937	75,024	72,695
LCL traffic	111	111	126	148
Total Cars Loaded	407,566	408,327	407,919	392,320
% change from previous year	3.2	(0.0)	3.9	(0.0)
Estimated revenue ton-miles (billions)	18.2	18.3	18.2	17.6
% change from previous year	4.5	1.2	1.7	1.5
Total:		1986	1985	% change
45 weeks		766.6	765.1	0.2

Piggyback loadings

	Nov. 1 week	Oct. 25 week	Oct. 18 week	Oct. 11 week
Trailers/containers	106,571	107,665	105,021	104,929
Cumulative total, 44 weeks				
Trailers/containers		4,222,392		8.9
% change from 1985				

Rail freight traffic trends



Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	October 1986	10months 1986	10months 1985	October 1986	10months 1986	10months 1985	Nov. 1, 1986	Average Backlog 1986	Average Backlog 1985
Built new by carbuilders	1,132	8,668	9,835	723	10,164	7,835	3,255	3,589	3,727
Built new in RR shops	0	0	406	0	0	0	0	0	28
Built new—total	1,132	8,668	10,241	723	10,164	7,835	3,255	3,589	3,755
Rebuilt	20	95	0	20	95	0	0	13	0
TOTAL	1,152	8,763	10,241	743	10,259	7,835	3,255	3,602	3,755
Locomotives (new and rebuilt)	20	295	517	N/A	N/A	N/A	8	134	236

Source: Transportation Div., AAR and American Railway Car Institute

Labor issues will heat up

Some simmering controversies that could boil over next year involve secondary boycotts; FELA vs workman's comp; branch line job protection; and the trend to "power by the hour."

By GUS WELTY,
Senior Editor

As fast as you get rid of one set of problems, another set of problems arises.

So it is with labor-management relations in the railroad industry, looking back at 1986 and looking ahead to 1987.

National agreements, stretching out to 1988, have been reached—with the United Transportation Union in 1985 and with the Brotherhood of Locomotive Engineers (through arbitration) and the Brotherhood of Railway and Airline Clerks in '86.

Smaller unions have been a problem, one that was yet to be resolved as of this month.

And as one long-term participant in and observer of the rail labor-management venue puts it, "I can't recall when there were more labor-management issues on the legislative scene."

The point is well-taken.

Railroads and their largest unions, UTU and BRAC (now including the Brotherhood of Railway Carmen) have agreements. Railroads and their operating unions, UTU and the Brotherhood of Locomotive Engineers, have agreements.

Railroads and the small unions, most of them, have not reached final agreements, although union negotiators have initialed tentative settlements.

• **Local conditions with national impact.** Many of the problems that remained, into December, had less to do with the proposed national agreements than with local conditions that had developed—and those

problems are surely going to carry over into 1987, with national implications.

Among the issues facing management and the unions:

—The secondary-boycott issue. It had been years since this was an issue, but it became one once again when a single union, striking on a small scale against a small railroad and a terminal company, sought to spread the strike. The Railway Labor Act of 1926 is silent on the issue. The Norris-LaGuardia Act of the New Deal era permits such boycotts. The Taft-Hartley Act of the 1950s prohibits them—but says nothing about the railroad industry, which leaves railroads vulnerable. The U.S. Supreme Court will hear a case brought by the railroad industry; depending upon what the high court says, there may also be legislation introduced, Administration-backed, to bring railroads into line with other industry and to outlaw secondary boycotts and picketing.

—The labor-protection issue, in cases involving sale of line segments to short line/regional-railroad operators. Now, there is no protection in such cases. What rail labor wants and what its allies in Congress want is protection akin to New York Dock or Oregon Short Line, in which employees are protected for six years against loss. Such job/income protection provisions came within an eye-blink of becoming part of Conrail-sale legislation in the 99th Congress, and House conferees blinked first. But job-protection legislation will be back. House sponsors have promised it.

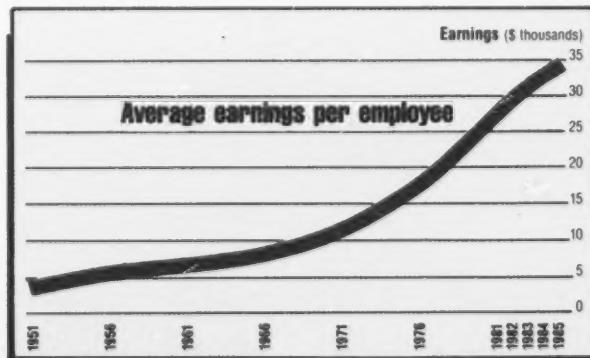
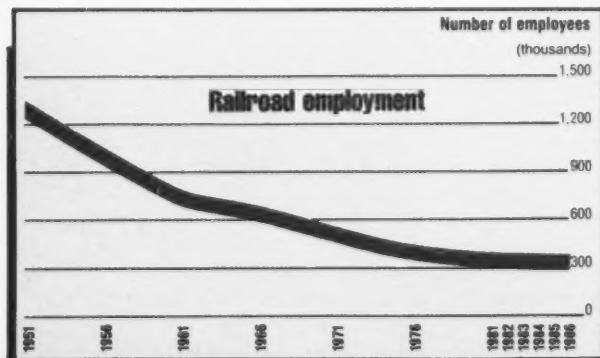
—FELA, the Federal Employer Liability

Act. Passed in 1908, it had its purpose at the time. But, the railroads say, that time has long since passed. Under FELA, if a railroad employee is killed or injured (and rail employees are the only workers covered by this specific piece of legislation), the recourse is a lawsuit, and the individual suing has to prove fault. The result is that personal-injury lawyers go hunting for areas where juries are most generous, and while some claimants benefit with huge awards, others (with, maybe, less skillful or less perceptive counsel) come away with little or nothing. Railroads want to put the system into the state-administered workman's-compensation system. This issue has not been a top-priority one with the industry in past years, but it's coming to the fore now.

—Taxes, on Railroad Unemployment Insurance and on Railroad Retirement. Rail management and rail labor reached an agreement on the unemployment program, but it didn't get through Congress, for reasons that are not fully understood, since the parties did agree. Meanwhile, actuaries at the Railroad Retirement Board are recommending substantial increases in RR taxes, just a couple of years after the system was said to have been "saved" by what railroads and unions agreed to.

Of these legislative issues, the two that may be the toughest are those dealing with secondary boycotts and labor protection in spinoffs, although those dealing with financial matters directly won't be easy.

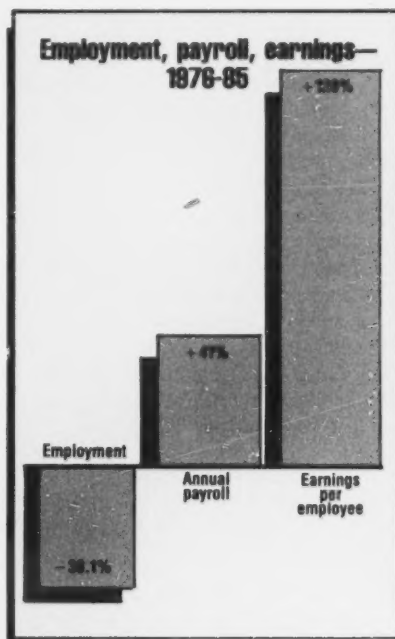
• **Secondary boycotts threaten chaos.** Developments this year on the secondary-boycott front seem to indicate that



unless the Supreme Court or Congress acts to bring railroads in line with other industry, something bordering on chaos could result.

For one thing, small disputes could flare into big ones, as happened in the walkout by the Brotherhood of Maintenance of Way Employees against Maine Central and Portland Terminal.

For another, failure to win a prohibition against secondary action could have crippling effects if the carriers try to follow through with the interest some have expressed in going to individual rather than joint bargaining when national agreements come up for negotiations in 1988. As indi-

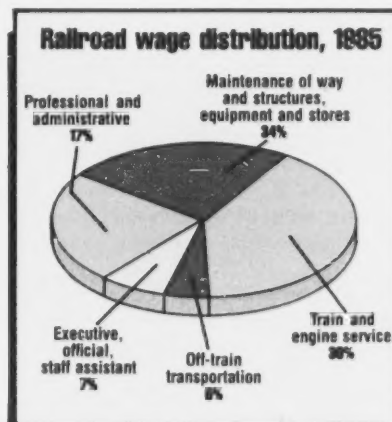


vidual roads have become larger through mergers and consolidations, so the thinking goes, individual priorities may be better served by individual handling. And there is also the matter of the leverage which larger carriers might be able to exert, individually. But, in the absence of a ban on secondary boycotts, a strike against one company could be quickly spread. That would likely trigger Congressional action—and with Democrats in control of both House and Senate, labor might well be willing and even eager to get Congress involved.

Meanwhile, labor will be giving a high priority to the job-protection issue. Here, too, the lines are clearly drawn. Using its discretionary powers, the Interstate Commerce Commission has not imposed protection in line-segment sales by major railroads, and that position has been strongly supported by the Department of Trans-

portation. With the change in control of the Senate that takes effect next month, labor may figure that it stands a much-improved chance of getting a job-protection bill through—but that is by no means a sure bet. Regardless of which political party is in charge, there remains a strong core of opposition to such legislation in the Senate.

Testimony presented at hearings this year stated the obvious, which is that imposition of job (or wage) protection would dry up the regional-railroad movement almost overnight. Studies of two recent line sales have indicated that if protective conditions had been applied, the sale prices would have had to be about three times what they actually were. It follows, of course, that under those conditions the deals would not have been made, shippers would have been deprived of rail service, communities would have lost a valued transportation and tax



asset, and employees would have lost jobs. As matters stand, with line segments going for reasonable prices, many and perhaps most affected employees wind up going to work for the new railroad. That would be lost. And it's even questionable as to how many employees would actually be eligible for protection when a line that couldn't be sold was abandoned.

● **"Power by the hour."** Then, there is another issue that suddenly came front-and-center just within the past few weeks—power by the hour, or the interest expressed by some railroads in obtaining the use of motive power on what amounts to a horsepower-rental basis. Not all carriers now see this as the way to go, but a couple of large ones do and Burlington Northern has taken the lead.

Here, several elements are involved. One is that such arrangements conserve railroad capital. A second is that the locomotive, especially those equipped with micro-processor controls, has become a tech-

nologically-advanced piece of machinery, demanding maintenance skills that may or may not exist in railroad shops. A third is that railroad shops have become increasingly expensive facilities to operate.

The shopcraft unions' reaction to this development initially was to hold up on the ratification process on national agreements which their negotiators had initiated, in an apparent attempt to get the new issue on the table. That aspect of the situation wound up in a federal district court, with a decision expected some time this month.

● **The stakes are big.** Railroads and rail labor are heading into a new year with a lot of potential hot spots that need to be cooled-down. And in that context it's worthwhile considering the points made by Richard E. Briggs, executive vice president of the Association of American Railroads at a recent seminar on technology, people and productivity:

—Traditional rail customers in heavy industry are in a mode of slow-growth and no-growth, while the segments of the economy that are growing "produce trailerloads of freight that manifest an unquenching preference for motor carriers."

—What railroads and their employees can change is the efficiency with which they work. Railroads have invested huge amounts of capital in such things as better locomotives, bigger freight cars, improved track and signal systems and advanced computer systems. But "without an efficient work force, capital improvements lose their strategic worth."

—Despite substantial reductions in the work force, rail labor costs today are higher than they were in 1980. High labor costs are pricing railroads out of many markets, and they threaten to negate the productivity improvements made through capital investment.

—Recent contracts with rail unions do recognize that "true job security requires a financially healthy employer," and that "railroad jobs are no more secure than the corporate entity providing the jobs."

Customers buying transportation today, Briggs said, "are as price- and quality-conscious as middle-class homemakers purchasing family necessities. Railroads that fail to offer a competitive transportation package at a competitive price are going to be swept aside. Such are the relentless forces of economic efficiency."

It all comes down to this: "How railroads and their employees accept what they cannot change and address what they can change will define the size and health—maybe even the existence—of freight railroads in the decades ahead." ■



Electrification of Metro-North's Upper Harlem Line has cut travel time and won new riders. Scarsdale station is pictured.

Kent Patterson

M-N, LIRR: A new plan

New York City commuters will get a better run for their money (and almost always a seat) when improvements blueprinted under a new, \$1.8-billion capital program fall into place.

For the 446,000 riders who board Metro-North and Long Island Rail Road commuter trains on an average weekday, a happier new year is in store.

On Jan. 1, a new five-year plan will begin pumping nearly \$1.8 billion worth of improvements into the car and locomotive fleets, the tracks and stations, and the shops and yards of New York's two state-owned commuter roads. Coming on the heels of a five-year program of equal magnitude that technically ends on Dec. 31 (although many Phase I programs will spill over into Phase II), this new infusion of capital could make the busiest and biggest of all American suburban rail operations also the best.

The bundle that the New York Metropolitan Transportation Authority is putting together for Metro-North and LIRR is part of a larger package—totaling \$8.3 billion—that MTA hopes to deliver over the next five years to improve rapid transit, commuter rail, and bus operations in a service area that sprawls over nearly 4,000 square miles.

The biggest piece of the package will go to the New York City Transit Authority (RA, Nov., p. 52). NYCTA's emphasis will be on repair and rehabilitation of a subway system that has grown creaky and unreliable through years of neglect and abuse, and has suffered a deep loss of riders. The commuter roads, on the other hand, will be investing in equipment and facilities designed to enhance service that is already comparatively good and that must now be geared for bigger passenger loads.

Over the next five years, Metro-North and LIRR together plan to spend \$149 million on equipment, \$401 million on stations, \$454 million on line structures, \$156 million on track, \$183 million on signals

and communications, and \$190 million on shops and yards—and these are just the biggest-ticket items on their shopping lists.

• **The Metro-North mix.** The Metro-North five-year program will be heavy on rolling stock acquisitions, with \$118 million earmarked for this purpose. An early order of business will be the purchase of 60 new M-4 cars for the New Haven line. Metro-North also plans to acquire coaches and new diesel locomotives for its Upper and West of Hudson services. Both Metro-North and the Long Island will be working on the design for a new generation of electric cars. "Metro-North has budgeted about three times as much for this activity as the LIRR," notes MTA. "Before commitments are made, the two railroads need to collaborate on a common car design."

Among other major Metro-North capital activities will be construction of a north end access at Grand Central Terminal in New York; rehabilitation of the Grand Central Terminal infrastructure, track, power, signals, and interlockings; and the replacement of New Haven line catenary.

Metro-North's share of the new five-year program (Phase II) comes out to \$749 million. Its share of the just-ending five-year program (Phase I) was \$900 million. How Phase II will build upon the foundations laid in Phase I is described by MTA:

"The purchase of 142 new electric cars, with Phase I funds, has virtually eliminated the problem of standees on the Hudson and Harlem lines. In 1987, 54 new electric cars, bought jointly with Connecticut, will do the same on the New Haven line. New diesel equipment—19 coaches and 10 new self-propelled diesel rail cars—is serving the Upper Harlem and Upper Hudson lines; eight more coaches will arrive next year.

The three new diesel coaches operating west of the Hudson will be supplemented by seven more next year.

"These new cars allowed the railroad to use operating funds to accelerate overhauls of its older cars. The Metro-North fleet is now approaching a state of good repair, in which peak performance will be the norm, not the exception. Air conditioning and heating systems now work in Metro-North cars 97% of the time, compared with 82% in 1982. Most of the fleet and the 732-mile track system it runs on are now on a regular replacement basis.

"But a modern fleet that will be 95% electric by 1988 cannot rely on obsolete power substations, which use equipment no longer manufactured and require around-the-clock manning. By 1989, Phase I funds will replace 19 such substations with 38 solid-state, automatic units. Phase I funds have already purchased another 12 units that are feeding power to the newly electrified Upper Harlem line, where ridership has grown by 20% while travel time between Brewster and Grand Central has been cut by 20 minutes.

"Power in Metro-North's enhanced system will move through new third rail, twice as conductive as its predecessor. The new rail is being installed along two-thirds of the 300 miles of electrified track."

Phase I money has also put a centrally controlled, bi-directional signaling network in place. The best-equipped railroad, as MTA points out, cannot remain at peak efficiency without the proper maintenance facilities, and in this area Metro-North has invested heavily. The 200-acre Harmon repair and maintenance shop complex has been modernized. It has been rebuilt to obtain production-line efficiency for complete

overhauls as well as major repairs. And by early 1987, a new shop at Brewster will be maintaining Upper Harlem line cars. It will be equipped with mechanical washers capable of cleaning 100 cars a day.

The new, Phase II program will fine-tune an already smoothly functioning system. Equipment acquisitions in Phase I reduced Metro-North's average number of standees per hour from 4,100 in 1983 to an estimated 580 at the end of 1986. Rolling stock acquisitions contemplated during the new program will provide seats not only for all existing customers but also for thousands of new riders that are in Metro-North's forecasts.

Passenger stations will be upgraded to match the new service standards; Metro-North has budgeted \$240.3 million for this purpose, the biggest single item in its new plan.

"Metro-North invested its Phase I capital funds to great and highly visible effect," concludes proud parent MTA. "The railroad's on-time performance, at 80.5% when it was founded, is today 91%. The Phase II program will greatly advance the reconstruction of a commuter rail system that must serve as a bulwark of the region's

LONG ISLAND RAIL ROAD 1987-1991 CAPITAL PROGRAM						
SUMMARY (\$ Millions)						
CATEGORY	COMMITMENT YEAR					TOTAL
	1987	1988	1989	1990	1991	
Cars	\$10.8	\$1.4	\$17.6	\$0.9	\$0.0	\$30.7
Passenger Stations	62.2	36.1	39.5	15.2	8.0	161.0
Track	50.6	28.5	24.3	31.6	20.8	155.8
Line Structures	77.5	107.5	18.6	25.1	69.2	297.9
Signals & Comm.	31.1	78.4	1.8	22.7	2.9	136.9
Shops & Yards	49.5	16.2	13.2	23.8	0.0	102.7
Security	0.0	0.0	0.0	0.0	0.0	0.0
Electrification	8.7	17.3	6.0	85.9	0.3	118.2
TOTAL	\$290.4	\$285.4	\$121.0	\$205.2	\$101.2	\$1,003.0

economy well into the next century."

• **Change at Jamaica.** The Long Island, which purchased 174 new electric cars during the Phase I program, is setting aside only \$30.7 million for equipment in Phase II. LIRR proposes to acquire three prototype dual-mode, electric/diesel-electric locomotives (for which a search is now under way among suppliers around the world) along with 12 new coaches. These will be

used for evaluation of dual-mode service on the Port Jefferson branch.

LIRR's Phase II plan also calls for design of a third main line track between Floral Park and Hicksville and construction of a section of that track between New Hyde Park and Carle Place; and completion of a new Penn Station Central Control center, as well as other track, structure and signal improvements at Penn Station to be under-

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METRO-NORTH COMMUTER RAILROAD 1987-1991 CAPITAL PROGRAM

(\$ Millions)

CATEGORY	COMMITMENT YEAR					TOTAL
	1987	1988	1989	1990	1991	
Rolling Stock	\$29.1	\$1.9	\$21.2	\$42.6	\$23.2	\$118.0
Passenger Stations	97.0	33.9	52.0	32.5	24.9	240.3
Line Structures	29.4	29.9	44.1	38.0	14.7	156.1
Signals & Comm.	12.2	1.4	29.5	1.4	1.4	45.9
Power	8.5	1.2	33.0	31.2	11.5	85.4
Shops & Yards	13.7	33.6	14.7	15.5	2.5	80.0
Electrification	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.6	2.9	13.3	6.7	0.0	23.5
TOTAL	\$190.5	\$104.8	\$207.8	\$167.9	\$78.2	\$749.0*

*Total may not add due to rounding

taken jointly with Amtrak.

But the biggest single project in LIRR's 1987-91 program, and one calculated to bring cheers from its riders, will take place at Jamaica, that point on the railroad where nine lines converge onto two congested tracks that lead into Penn Station. To unclog this bottleneck, the railroad will entirely reconfigure and rehabilitate the Jamaica complex. The master plan calls for

construction of an east-end flyover, a west-end flyover, and an express corridor through the center of the station.

As in the case of Metro-North, the Phase II improvements planned for LIRR will extend and complement improvements that are still going into place under the Phase I five-year plan, for which \$1.1 billion was allocated. Under that plan, the new 20-acre West Side storage yard adjacent to Penn

Station in lower mid-Manhattan has been built; it will go into operation next summer. "With new capacity to service, clean, and store up to 320 cars west of Penn Station, the railroad will no longer need to send a third of its morning rush-hour trains, empty, back out to Long Island just to get them out of the way," points out MTA. "Cars in need of minor repair will not have to hobble back to Jamaica. And evening-rush passengers will enjoy many more clean cars from Penn Station than ever before."

As MTA sees it, the new West Side yard "will help pull the cork" out of the funnel between Jamaica and Penn Station. Meanwhile, reverse signaling will, in effect, widen the stem of the funnel.

Another Phase I project that won't be completed until 1987 is electrification of the line between Hicksville and Ronkonkoma, which is expected to reduce travel time to Manhattan from this part of Suffolk County by up to 20%.

By the end of the new five-year plan, says MTA, "LIRR will be a system newly made and in part redesigned to provide swift, sure movement between Long Island's booming communities and the vigorous city to their west." ■

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**Centralizing
operations on CSX**

**Regional railroading:
Getting a piece of the action**

Railway Age

...for the new age of railways

January 1987

Features

27 CSX centralizes operations control

Ex-Seaboard and ex-Chessie people are now overseeing all train operations from Jacksonville, a changeover that was accomplished with speed and efficiency.

30 Regional railroading: Risks and rewards

How does a seller identify a spin-off candidate line? How does a buyer pick a winner? A *Railway Age*/Irving Trust seminar turned up some answers.

35 Will aluminum cars lead a turnaround?

As trainsets of coal cars ordered 15 to 20 years ago start to wear out, the market for lighter-weight, aluminum-sided hoppers and gondolas could open up.

37 Heavy hauling for profit

Harnessing advances in track/train dynamics technology for greater productivity in a time of depressed business was the theme of the latest heavy-haul conclave.

43 ATCS: Will UP be first?

A ground based track-transponder/on-board interrogator system could be in place systemwide within 36 months. The projected rate of return: 60% annually.

48 The great passenger train comeback

Though still viewed by a near-sighted Reagan Administration as anachronisms, trains as people movers are experiencing an extraordinary renaissance.

Railway Age

...for the new age of railways



NJ Rail Transit photo by Kent Patterson.

- 24 At GATX, one call now does it all
- 25 UTU-BLE merger: Not now, but...
- 25 Omaha park to honor UP's Kenefick
- 25 American President adds new Linertrains
- 46 All-seeing cameras help deter crime
- 46 San Diego building third LRT line
- 46 Alberta shelves high-speed plan
- 46 Florida consortium signs with Bombardier

Update

- 22A ACF's "Auto-Unload" covered hopper slashes labor costs
- 22A CC&P-IHB pact speeds interchange
- 22B New terminal attracts mini-landbridge traffic
- 22B Conrail rebuilds coal conveyor
- 23 Rate compression forces revenues down
- 23 Railroads team up to solve a weighty problem
- 24 SP shifts traffic to ICTF facility

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on Labor
- 44 In Transit
- 58 Publisher's Perspective

Departments

- 8 Meetings
- 13 Industry Outlook
- 14 Market Outlook
- 16 Revenues & Expenses
- 47 Bookshelf
- 52 People in the News
- 53 Products
- 57 100 Years Ago

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Market Outlook

Equipment

Electric Fuels Corp.: Placed an order with Ortner Freight Car Division of Avondale Industries for 95 aluminum-bodied Rapid Discharge II hopper cars. They will be identical to 82 cars which Ortner built last year for Electric Fuels, a subsidiary of Florida Power Corp.

Metro-North Commuter Railroad: Ordered an additional 23 Shoreliner commuter cars from Bombardier at a cost of \$21.4 million. Following delivery late this year, they will join 39 Shoreliners already in operation on Metro-North's upper Hudson, Pascack Valley, and Port Jervis lines. The 85-foot cars can seat up to 131 passengers; they are diesel hauled. The purchase will be funded by Metro-North's \$749-million share of the New York Metropolitan Transportation Authority's Phase II capital improvement program (RA, Dec. 1986, p. 56). The order was placed late in 1986 to take advantage of an estimated \$4 million "safe-harbor" leasing tax saving. Metro-North estimates that another \$4 million in inflationary costs will be saved because the cars will be delivered five years before originally planned.

• L. K. Comstock & Co., in joint venture with Yonkers Contracting Co., is the apparent low bidder, at \$19.3 million on a contract to supply 14 traction power substations on the Hudson and Harlem lines.

New York Metropolitan Transportation Authority:

Authorized the award of a \$16.6-million contract to Newport News Industrial Corp. (NNI) and American Coastal Industries, Inc. (ACI) for the overhaul of 52 cars for the New York City Transit Authority. Propulsion systems will be replaced, trucks overhauled, and interiors refurbished. The work will take place at ACI's facilities in Chesapeake, Va., with NNI, a subsidiary of Newport News Shipbuilding, providing financial and engineering support and project management.

RoadRailer: Subcontracted an order for 250 Mark IV Road-railers to Stoughton Trailer, Inc., of Stoughton, Wis. Delivery of the units, which were ordered by Norfolk Southern, is to begin in February. RoadRailer is an affiliate of Thrall Car Manufacturing Co.

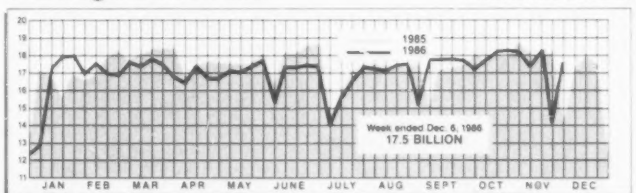
Revenue freight carloadings

Commodity	Dec. 6 week	Nov. 29 week	Nov. 22 week	Nov. 15 week
Grain	28,100	23,701	31,614	30,940
Other farm products	4,501	3,528	4,636	4,468
Metallic ores	8,786	10,626	10,384	12,454
Coal	117,185	93,386	123,461	110,386
Crushed stone, gravel and sand	11,969	8,273	13,271	12,920
Nonmetallic minerals	8,365	6,613	8,464	7,610
Grain mill products	11,282	9,145	11,091	11,469
Food and kindred products	11,365	8,712	11,520	11,394
Primary forest products	10,652	6,964	10,681	10,388
Lumber and wood products except furniture	7,429	5,665	7,929	7,489
Pulp, paper and allied products	12,690	11,978	12,346	12,338
Chemicals and allied products	25,339	18,699	23,868	22,433
Petroleum products	4,628	3,380	4,323	4,256
Stone, clay and glass products	9,287	7,293	9,461	9,477
Coke	4,235	3,567	4,216	4,006
Metals and products	7,627	6,368	7,242	7,031
Motor vehicles and equipment	19,870	12,760	20,951	21,416
Waste and scrap materials	7,734	5,651	8,267	8,308
Forwarder and shipper assn. traffic	3,199	2,497	3,391	3,228
All other carloads	71,726	55,550	75,205	72,315
LCL traffic	103	115	175	114
Total Cars Loaded	386,072	304,471	402,496	384,440
% change from previous year	2.5	(0.6)	2.0	(1.4)
Estimated revenue ton-miles (billions)	17.5	14.1	18.2	17.3
% change from previous year	6.3	4.2	4.0	(0.2)
Total:	1986	1985	% change	
49 weeks	833.6	829.8	0.5	

Piggyback loadings

	Nov. 29 week	Nov. 22 week	Nov. 15 week	Nov. 8 week
Trailers/containers	85,138	111,581	106,394	106,563
Cumulative total, 48 weeks	4,634,174			% change from 1985
Trailers/containers	9.3			

Rail freight traffic trends



Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	November 1986	11 months 1986	1985	November 1986	11 months 1986	1985	Dec. 1, 1986	Average Backlog 1986	1985
Built new by carbuilders	886	9,554	10,745	668	10,832	8,185	3,037	3,539	3,555
Built new in RR shops	0	0	406	0	0	0	0	0	25
Built new—total	886	9,554	11,151	668	10,832	8,185	3,037	3,539	3,580
Rebuilt	0	95	0	0	95	0	0	11	0
TOTAL	886	9,649	11,151	668	10,927	8,185	3,037	3,550	3,580
Locomotives (new and rebuilt)	7	302	567	N/A	N/A	N/A	6	122	221

Source: Transportation Div., AAR and American Railway Car Institute

REVENUES AND EXPENSES OF RAILWAYS

Third quarter figures of calendar year 1986

(Dollar figures are stated in thousands, i.e., with last three digits omitted)

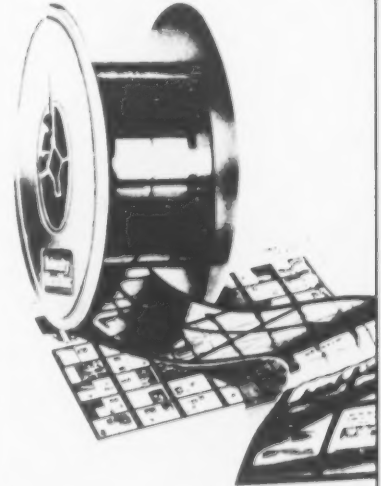
	Operating revenues				Operating expenses				Income after fixed charges				Net Ry. operating income		Net income	
	Freight	Other	Total		Deprec.	Total		Ratio	1985	1986	1985	1986	1985	1986	1985	1986
			1986	1985		1986	1985									
Amtrak	—	231,569	231,569	228,028	53,498	82,863	19,282	112,272	91,561	30,821	406,772	393,856	175.85	172.72	(170,065)	(159,776)
	—	635,650	635,650	620,992	158,922	183,099	52,881	300,886	286,216	72,988	1,178,686	1,200,394	185.43	193.30	(527,055)	(562,054)
Atchafalaya, Topeka & Santa Fe	10,307	474,273	484,580	533,623	85,897	75,034	16,630	115,219	126,348	22,596	440,728	485,625	90.95	91.00	38,858	47,572
	31,675	1,465,269	1,496,944	1,625,757	257,965	256,214	49,302	349,216	379,197	68,900	1,353,599	1,507,775	92.37	92.74	94,202	122,453
Boston & Maine	19,802	1,196	20,998	28,638	2,928	4,091	442	7,697	9,622	80	22,200	28,698	105.72	100.20	(1,002)	451
	58,293	3,059	61,352	87,671	9,436	12,168	1,326	23,670	28,099	240	67,387	86,423	109.83	98.57	(1,381)	2,530
Burlington Northern	20,398	943,953	1,002,337	1,002,337	171,007	145,707	56,269	190,113	180,928	19,368	772,842	786,308	81.87	78.44	164,363	234,560
	63,687	2,826,691	3,059,633	3,059,633	840,041	464,726	499,220	597,251	549,311	81,524	2,779,530	2,453,551	98.33	80.19	26,039	629,851
Chicago & North Western	185,504	25,984	211,488	205,285	40,512	34,368	6,321	50,442	48,930	3,475	206,189	192,743	97.49	93.89	14,070	2,233
	553,474	76,268	629,742	618,399	118,909	113,523	19,401	148,778	146,025	10,429	602,165	598,291	95.62	96.74	22,369	(10,277)
Conrail	728,274	23,484	751,758	770,128	100,719	111,768	24,670	179,186	165,461	37,109	647,462	659,261	88.12	85.60	107,254	120,258
	2,237,070	73,274	2,310,344	2,383,462	336,128	350,066	73,867	524,961	524,777	105,112	2,019,358	2,093,502	87.40	87.83	311,961	329,743
CSX	37,160	1,076,226	1,113,386	1,164,253	150,263	166,334	37,247	289,190	263,159	35,920	988,422	996,646	89.98	85.60	93,306	146,674
	3,289,879	103,901	3,393,780	3,604,014	464,208	507,091	111,475	872,937	877,849	103,694	2,962,213	3,155,865	87.28	87.56	390,488	429,962
Delaware & Hudson	19,394	396	19,790	28,356	3,954	4,794	407	7,485	8,268	124	22,147	27,988	111.91	98.70	(3,241)	(32)
	61,957	1,095	63,052	82,315	12,860	14,070	1,136	23,216	24,274	363	68,599	84,284	108.79	102.39	(8,042)	(2,457)
Denver & Rio Grande Western	69,787	1,090	70,877	78,516	11,264	10,947	3,519	14,700	14,694	3,282	61,422	68,301	86.65	86.98	9,985	9,543
	271,129	3,411	274,540	247,972	35,994	37,979	10,522	44,025	45,544	9,929	195,735	219,442	87.17	88.49	29,733	27,579
Egin, Joliet & Eastern	10,312	2,359	12,671	20,789	2,361	4,123	594	2,311	3,107	1,782	16,513	20,189	130.32	97.20	(3,428)	2,326
	38,434	14,953	53,387	65,307	12,451	10,696	1,796	9,176	9,896	5,531	56,869	62,247	106.55	95.31	280	7,779
Florida East Coast	26,727	666	27,393	26,823	4,377	4,592	1,203	4,993	5,337	1,210	21,615	22,664	78.90	84.49	8,211	7,739
	84,349	2,216	86,565	86,191	13,544	14,228	3,684	15,038	16,700	3,768	67,157	68,667	77.57	79.66	26,189	29,872
															6,375	13,156

Grand Trunk Western	3 mos.	71,223	3,804	75,027	80,851	9,195	10,231	17,559	17,119	1,610	74,943	80,203	99,88	99,19	1,022	73	2,097	3,895	
	9 mos.	232,852	11,244	244,096	255,382	29,488	31,596	56,510	53,637	4,842	251,243	252,317	102,92	98,79	4,659	(313)	7,235	3,895	
Illinois Central Gulf	3 mos.	144,063	16,627	160,690	207,165	5,490	29,138	(19,617)	267,945	61,823	126,039	553,151	199,243	344,23	96,17	(397,297)	5,572	(225,795)	(231,118)
	9 mos.	479,025	54,283	533,308	672,440	55,592	88,847	434	388,768	201,896	134,820	692,296	940,015	167,31	95,17	(373,958)	16,668	(194,076)	(209,855)
Kansas City Southern	3 mos.	69,041	3,425	72,466	79,857	13,587	12,377	4,338	16,059	16,708	5,240	60,815	66,232	83,92	82,93	9,965	12,047	7,319	5,523
	9 mos.	213,682	10,573	224,255	241,164	38,892	35,673	12,511	47,923	52,896	15,563	187,709	205,562	83,70	85,23	31,918	30,109	24,187	19,146
Missouri-Kansas-Texas	3 mos.	54,095	2,699	56,794	68,350	11,193	13,226	2,997	15,326	16,323	1,854	56,104	64,778	98,92	94,77	(966)	1,240	854	15,571
	9 mos.	168,165	8,403	176,568	205,416	33,058	39,159	8,673	44,014	48,969	5,590	171,151	194,071	98,93	94,46	4,454	4,054	6,181	20,991
Norfolk & Western	3 mos.	367,760	14,412	382,172	408,324	66,553	67,190	11,023	83,229	87,965	15,374	322,257	334,560	84,32	81,93	101,401	130,402	24,351	65,316
	9 mos.	1,179,140	46,357	1,225,497	1,286,830	192,915	184,491	35,968	255,176	259,956	42,749	964,170	1,013,319	80,30	78,74	318,795	365,689	116,212	192,047
St. Louis Southwestern	3 mos.	90,021	1,402	91,423	95,451	15,137	14,825	4,617	19,991	22,811	5,209	76,103	84,170	85,43	88,18	13,966	11,219	8,050	8,696
	9 mos.	263,666	3,938	267,604	294,752	43,244	43,329	14,200	62,176	76,891	15,685	243,016	276,485	90,81	93,80	26,945	21,285	15,095	17,452
Soo Line	3 mos.	144,633	6,352	150,985	158,266	32,844	35,198	7,571	39,912	40,097	3,597	155,640	158,815	103,08	100,34	(8,069)	(8,894)	(1,443)	(5,331)
	9 mos.	444,552	15,053	459,605	443,242	93,355	90,539	22,090	113,789	110,767	10,404	458,397	438,340	99,73	98,89	(4,628)	(17,216)	7,493	(10)
Southern Pacific	3 mos.	457,575	18,100	475,684	512,672	85,034	63,759	24,793	131,353	136,696	20,056	469,875	508,096	98,77	99,10	30,205	43,484	22,087	45,894
	9 mos.	1,389,582	54,238	1,443,820	1,570,635	211,047	208,210	74,015	393,583	433,861	61,550	1,462,608	1,577,864	102,60	100,46	22,150	43,591	(15,906)	43,432
Southern	3 mos.	393,485	9,908	403,393	416,420	60,604	59,822	16,389	83,665	83,938	20,100	312,937	329,702	77,57	79,17	85,300	84,224	62,073	55,607
	9 mos.	1,240,126	28,737	1,268,863	1,284,324	187,760	185,818	50,991	257,231	267,837	59,386	982,764	1,031,207	77,45	80,29	280,299	250,637	182,769	172,900
Union Pacific	3 mos.	922,303	17,371	939,674	892,551	114,998	117,590	26,574	189,533	183,539	32,073	722,607	783,848	76,90	87,82	197,585	99,965	—	98,070
(Combined with Missouri Pacific)*	9 mos.	2,768,638	19,916	2,822,522	2,804,144	373,204	387,147	81,229	588,494	585,772	101,287	2,285,429	2,449,787	80,98	87,36	491,741	328,383	119,954	(84,327)

*Reflects combined results of operations of Union Pacific, Missouri Pacific, and Western Pacific railroads and their subsidiaries.

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Rate compression forces revenues down

The Class I railroads' revenue ton-miles were up nearly 1% in third-quarter 1986—but operating revenues declined by 5.2%. Ton-miles for the first three quarters of the year were almost even with the corresponding period a year earlier—but revenues dropped by 5.4%. This translated into a 13.9% drop in ordinary income for the third quarter, and a 10.1% decline for the first nine months.

These decreases in earnings exclude special charges taken by the Illinois Central Gulf to cover equipment write-downs and work force reductions. When these charges are included (see table), ordinary income for the third quarter was down 47.9%, to \$341 million, and income for the first nine months was down 53.7%, to \$804 million.

Said William H. Dempsey, president of the Association of American Railroads: "The earnings declines that are occurring independent of these special charges highlight an ominous trend caused largely by rate reductions in an unprecedented atmosphere of excess transportation capacity and flat demand for service."

"Despite continued sharp reductions in both employment and the price of fuel," said Dempsey, "earnings still are declining. The trend is troubling because we cannot reasonably expect to continue to cut labor and fuel expenses as we have been doing."

Dempsey said that independent of the special charges, operating expenses fell by 5.2% in the third quarter and 5.8% in the first nine months.

Railroads team up to solve a weighty problem

It's 193.5 feet in length and it weighs 388,000 pounds. It's a butane splitter. And it had to move 1,558 miles from Houston to Marysville, Mich., to a Consumers Power Co. processing plant. The movement took 10 days, and a lot of planning. Southern Pacific originated the gigantic load, which then moved via Cotton Belt, Alton & Southern, Norfolk Southern (NW), Grand Trunk Western and CSX Transportation to destination.

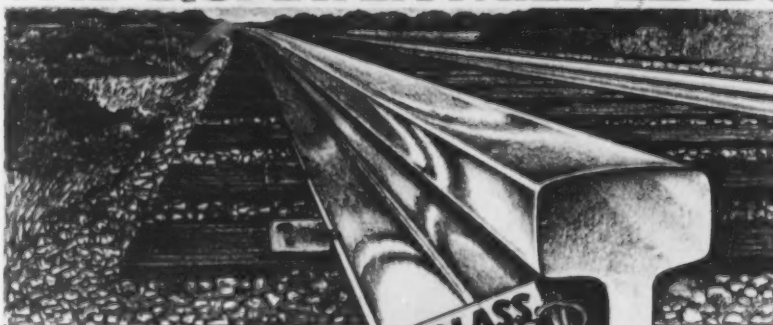
Class I Railroads in the United States For the third quarter

	1986 (millions)	1985 (millions)
Operating Revenues	\$6,428	\$6,779
Operating Expenses	5,986	5,898
Net Revenue from Operations		
United States	442	881
Eastern District	-32	453
Western District	474	428
Ordinary Income		
United States	341	654
Eastern District	39	335
Western District	302	320

For the first nine months

Operating Revenues	\$19,780	\$20,919
Operating Expenses	18,111	18,409
Net Revenue from Operations		
United States	1,669	2,510
Eastern District	888	1,320
Western District	781	1,190
Ordinary Income		
United States	804	1,737
Eastern District	647	952
Western District	157	784
Rate of Return on Net Investment	3.52%	4.72%

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The great passenger train

Amtrak, commuter rail, rapid rail, light rail—all are flourishing as the nation rediscovers the efficiency of trains as people movers. Odds are, they will survive another OMB attack on federal funding.

By LUTHER S. MILLER, Editor

In the Reagan Administration's version of "The Great Train Robbery," trains are not the victims but the villains, picking the taxpayers' pockets and highballing off with money that could more profitably be spent on almost anything else.

A posse from the Office of Management and Budget is already sending out its signals for a 1987 attack. OMB's new budget will call for a massive slash in mass-transit funding, perhaps by as much as \$1.6 billion a year, with new rail starts a main target. What form this year's raid on Amtrak will take was not clear in the waning days of '86. Leaks to the press covered a gamut of options, from a zero budget (i.e., sudden, systemwide death) to the bizarre notion that

chunks of the system could be sold off to the private sector.

None of this is new. For two years, the Administration's budget-balancing act has called for either elimination or drastic reduction of federal support for transportation (except, of course, for highways and air control systems, which the OMB curiously and naively believes to be self-supporting). And for two years, OMB has succeeded only in chipping away at public transportation funding that it perceives to be a pernicious problem but that Congress continues to see as a solution.

● **A premature obituary.** The Administration's view seems to be that passenger trains, while fine in their day, are now a dying breed, kept alive only by costly life-support systems that are hard to justify in an era of flexible family autos and fast planes.

That is not an original idea. No less an authority than Professor George W. Hilton wrote just 18 years ago, "The passenger train is moribund. The time for the obituary is not far off."

But a funny thing happened to the passenger train on the way to the graveyard.

Amtrak was pieced together out of the surviving remnants of line-haul passenger service. At about the same time, cities began to rediscover the train. And the situation began to change—so gradually, and with so many fits and starts, that it was not apparent to everyone. But looking back over a couple of decades, the cumulative change has been dramatic.

Today, mass transportation in general and passenger trains in particular are experiencing an extraordinary renaissance. The trains come in various guises—Amtrak,



Amtrak passenger-miles topped 5 billion last year, and mail and express traffic was also booming as this scene at Philadelphia's 30th Street Station suggests.

Howard L. McKean

To accommodate soaring ridership, Metro-North this year will embark on a new five-year, \$749-million capital improvement program.

Kent Patterson

comeback

commuter, rapid transit, light rail. And their popularity has not peaked.

● **The evidence.** Nearly everywhere you look, you can see evidence of the great passenger train comeback—from the congested Northeast Corridor, where Amtrak trains are now moving more people between New York and Washington than the Eastern Airlines shuttle, to Southern California, where the San Diego Trolley is busily building a third light rail line in response to public demand; from the commuter trains of New Jersey Rail Transit, which despite higher fares and lower gasoline prices are experiencing an unprecedented surge in ridership, to Portland, Ore., where a new light rail line exceeded its first-year ridership goals by 20% just a few weeks after it opened.

Even in Buffalo and Miami, where the OMB used to turn its spotlights whenever it wanted to expose a rail transit failure story, the trains are beginning to pull passengers out of their autos now that new elements

have fallen into place. Late in 1986, the Miami-Dade County Metrorail was carrying 34,000 riders a day, up from 25,000 just six months earlier. A downtown People Mover that opened in June and is now carrying more than 9,000 riders a day (vs a hoped-for 6,000) is largely responsible for the increase. In Buffalo, rail ridership soared from around 22,000 a day to 27,000 with the opening in November of the last mile of the Niagara Frontier Transportation Authority's 6.4-mile Metro. NFTA's biggest problem is no longer fending off its critics but finding enough parking spaces for motorists who want to leave their cars and switch to the train.

What's happening in these and other rail transit cities has not gone unobserved by cities that have been slower to try to kick the auto habit. Los Angeles, which a few decades ago ripped up one of the world's great urban and interurban rail systems, is starting to rebuild. And from coast to coast, there's a light rail boom. Inspired by the

example of San Diego, Sacramento and San Jose are well along with their own lines. Dallas, a city long driven by oil interests, is getting ready to put in 92 miles. St. Louis is far advanced with plans for a 15-mile system that it has successfully demonstrated will be more cost-effective than any alternative. The State of New Jersey has approved plans for a 13-mile, \$825-million line along the Hudson River southward from the George Washington bridge, and New York City is studying the feasibility of a parallel line on the other side of the river. Rochester, N.Y.; Norfolk, Va.; Columbus, Ohio; Detroit—all are looking at light rail.

But what the Reagan Administration is looking at is a trillion-dollar national budget, a staggering deficit, and the need to trim it down to the size required by law—and OMB has decided, again, that among the expendable items in the budget are transit and trains. Its prospects for success do not look a lot brighter than they did last year, or the year before.

AMTRAK: Five years of growth

	FY82	FY83	FY84	FY85	FY86
Passenger Miles (millions)	4,172	4,246	4,552	4,825	5,012
Ridership (millions)	19.0	19.0	19.9	20.8	20.3
Operating Revenues (millions)	\$630.7	\$664.4	\$758.8	\$825.8	\$861.4

● **A boon to business.** While it touts itself as "a businessman's Administration," the Reagan White House is not likely to fund support from certain segments of business as it seeks, under the banner of budget-cutting, to stem the flow of public transportation spending.

The transit business is big business—a business that is pumping billions of dollars a year into the national economy, including many billions in capital investment.

New York's Metropolitan Transportation Authority alone plans to invest \$1.7 billion a year over the next five years in its two commuter railroads, Long Island and Metro-North, and in the trains and buses of the New York City Transit Authority. MTA's investments are almost entirely city- and state-generated.

But federal support for transit remains important to New York. For one thing, as MTA's financial officers have grumpily observed, a sustained attack from Washington on the whole concept of rail transit could dry up private capital markets.

Philadelphia's financially-strapped Southeastern Pennsylvania Transportation Authority has also taken an innovative private route to capital funding. SEPTA, whose suburban-train ridership is growing despite severe overcrowding, has entered into a \$90-million agreement with Bombardier of Canada under which it will acquire 35 new commuter cars and seven new electric locomotives (the latter to be supplied by Electro-Motive). A third party, a financial institution, will be the actual lessor. Any such future deals will not be made easy by Washington's continued expressions of "no faith" in the future of rail.

In addition to the billions of dollars that it pumps directly into the nation's economic bloodstream, rail transit is important to local and regional economies in other ways. Some of them are easily measurable: when the Washington Metro opened a new line in suburban Virginia last year, local realtors estimated that an additional \$20,000 was instantly added to the value of every house along the line. Other benefits are more qualitative than quantitative, but no less

important. They have to do with what Toronto, which has a rail-based public transit system that is the envy of cities around the world, calls the "quality of life." They have to do with the decongesting of city streets, highways, and busy air corridors. If the OMB has tried to apply its cost/benefit analyses to such imponderables, the word hasn't got out.

● **Amtrak—and a red herring.** While there is evidence all across the land that trains continue to be the most efficient of all people movers, and that people will use them if they are clean and comfortable and run on time, it is Amtrak that is in the national focus—and it is the Amtrak battlefield that is likely to see the most spirited action in the new budget wars.

OMB is likely to make much of the fact that Amtrak ridership was actually down slightly last year from the year before. If so, OMB will have a very smelly red herring on its hands.

It is a fact that Amtrak ridership in fiscal year 1986 dropped to 20.3 million from 20.8 million the year before. This was due to service reductions mandated partly by reduced federal support.

But on the service that remained, business was booming: Despite the slight decline in ridership, Amtrak in 1986 reported an increase in passenger miles to 5.012 billion, from 4.825 billion the year before. Just as the freight railroads measure their business not by carloads but by ton-miles, the passenger roads measure theirs by passenger-miles—and on this score, Amtrak business is at an all-time high.

So are revenues. Amtrak's operating revenues last year added up to \$861.4 million, up from \$825.8 million the year before.

All of Amtrak's revenues do not come from its riders. Unlike most other government or quasi-government enterprises, Amtrak is run on strictly businesslike principles, and its president, W. Graham Claytor, Jr., looks for new business opportunities as avidly as he did when he ran the Southern Railway. One result of this has been a surge in mail and express revenues, which amounted to only \$1 million in

Amtrak's first year but hit \$22.6 million last year and are projected at \$33 million in fiscal 1987.

Today, Amtrak is earning 60% of its costs from revenues, a revenue-to-cost ratio that is among the highest of national passenger rail systems anywhere.

● **OMB's Corridor caper.** Faced with this kind of performance, even the OMB cannot with a straight face call Amtrak a total failure—so late last year OMB, in effect, pronounced a part of Amtrak to be a commercial success, so much of a success that it could be put up for sale.

According to mid-December press reports, an early draft of the 1987 national budget called for the sale of Amtrak's Northeast Corridor. Originally, it was estimated that such a sale might bring the government \$2.8 billion; that was later revised to \$1.5 billion.

"It's just as feasible as the sale of Conrail," one Administration official was quoted as saying. It is not recorded whether this official was asked if he knew the difference between a freight railroad that has been netting \$500 million a year and a passenger railroad that has been losing \$600 million.

The shakiness of this Administration proposal was underscored when Federal Railroad Administrator John H. Riley said (in another context, and without direct reference to the OMB draft proposal, which had not then been made public) that if the Northeast Corridor were spun off from the national Amtrak system it would have an operating deficit of \$220 million.

Amtrak President Claytor, who has been through all of this before, said mildly that he would be surprised if a Northeast Corridor sale turned out to be the Administration's final proposal. He recalled that such a proposal was made two years ago; there were no takers.

Indeed, the Administration has found few takers for any of its proposals to privatize public transportation.

No matter how lofty the principle, it doesn't always get very far when it collides with the public interest. ■

######

THE ARCHITECTS OF CHANGE:



**Hays T.
Watkins**

"CSX is no longer solely a railroad company. We must be a market driven transportation company or be driven out of the market."

High speed rail:
Florida sets the pace

Railway Age

...for the new age of railways

February 1987

Features

29 The architects of change: Hays T. Watkins

"We either have to go where the productive capacity is being located and participate in the entire transportation movement or else die a slow death," says CSX's chairman and CEO.

34 ATSF puts "Quality Network" on the map

With a valuable assist from employees, Santa Fe has introduced a new breed of high-speed, low-cost trains designed to siphon traffic from the highways.

36 Global One lifts C&NW's hopes

It's the most efficient container-handling facility on any road and it could turn part of North Western's main line into a double-stack expressway.

39 Troubled times for rail labor

BRAC's Richard I. Kilroy, citing the "devastating" impact of job losses on the unions, discusses ways by which he hopes the trend can be reversed.

42 Better curve grease pays off

It's estimated that curve-lubrication alone can save railroads over \$400 million a year. After tests, Santa Fe has settled on a Mobil formulation.

47 "Dump Train" fills a gap

Georgetown Railroad's short, self-unloading train is a cost-efficient alternative to the trucking of small shipments of bulk commodities.



Page 29

54 High-speed rail: Florida sets the pace

The "Great Race" for HSR heats up as Florida issues a request for proposals to potential developers to build a 300-mile Tampa-Orlando-Miami line.

Update

- 21 Trinity acquires Greenville, Ortner
- 21 Fairmont-Tamper merger explored
- 21 Air Action car has "unique" options
- 21 12,521 freight cars ordered in 1986
- 21 GM chief to address Intermodal Expo '87
- 22 Violent Amtrak-Conrail collision raises troubling questions

- 25 Can boxcar pools cut empty miles?
- 25 BN's "Expediter" keeps growing
- 25 WRPI buys into BN coal line
- 25 KCS says it wants Southern Pacific
- 26 What UP expects from Overnite
- 51 Bombardier buys Pullman Technology
- 51 PATH upgrades a busy station
- 51 GM locomotives delivered to VIA
- 51 New car wash works year-round
- 52 Dallas plan found to be "affordable"
- 52 OMB proposes Amtrak sale
- 52 Revenue-cost ratio rises in Washington
- 52 LS Transit and SOFRERAIL team up
- 52 TTC moves to ease station congestion
- 52 L.A. makes way for light rail

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on Labor
- 49 In Transit
- 62 Publisher's Perspective

Departments

- 8 Meetings
- 11 Letters
- 13 Industry Outlook
- 14 Market Outlook
- 44 People in the News
- 58 Products and Literature
- 61 100 Years Ago

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Market Outlook

Capital expenditures

CSX: Railroad capital program for 1987 will total approximately \$600 million, compared with an estimated \$800 million in 1986. Except for the purchase of 250 Road-Railers, most of the money will be spent for improvements to track and facilities. Approximately 3,000 freight cars will be rebuilt and 11,000 cars will undergo repairs.

Norfolk Southern: Plans to invest \$538.4 million in capital improvements this year, down 13% from the \$618.1 million programmed for 1986. The 1987 budget comprises \$418 million in new projects and \$120.4 million carried over from 1986. Roadway improvements will account for \$425.9 million of the '87 program and equipment purchases for \$112.5 million. Equipment outlays include \$30 million for intermodal trailers, containers and RoadRailer units; \$26.3 million for 25 new diesel-electric units; \$23.9 million for more than 700 multi-level, enclosed motor vehicle racks; \$6 million for 300 100-ton covered hopper cars; and \$1.6 million for installation of wheel flange lubricators on 185 locomotives. In the roadway category, \$214.1 million has been allocated for track and related work. Other projects include \$5.6 million for construction of a yard to serve the new Chrysler/Mitsubishi plant in Bloomington, Ill.; \$1.3 million to relocate the Alexandria, Va., yard to Manassas; \$16.7 million for m/w equipment; \$2.5 million for crossing protection; and \$4.9 million for microwave system improvements, including \$2.6 million for replacement of microwave equipment between Atlanta and Cincinnati. Intermodal facility expansion has been budgeted at \$9.1 million.

Trailer Train: Capital spending plan for 1987 calls for investment of \$125 million in new equipment. That's up from the \$107 million actually spent in 1986. The '87 plan calls for acquisition of 2,500 double-stack wells, 300 spine (skeleton) cars for containers, and 300 center-beam cars; in addition, the plan looks to acquisition of a substantial number of intermodal platforms as replacements for existing equipment. In 1986, TT acquired 2,080 double-stack wells, 600 single-platform FrontRunner units, and 675 center-beam cars.

Equipment

General American Transportation Corp.: Purchased 229 33,500-gallon-capacity pressure tank cars from Phillips 66 Co. Delivery is to be completed by April 1.

RoadRailer: Subcontracted an order for 250 Mark IV RoadRailer units to Wabash National, with deliveries scheduled to begin in March. The 48-foot units will be acquired by CSX Transportation for its CSXpress RoadRailer Service between Detroit and Atlanta. RoadRailer will provide engineering, operational support and proprietary material; Wabash National will handle manufacturing and assembly.

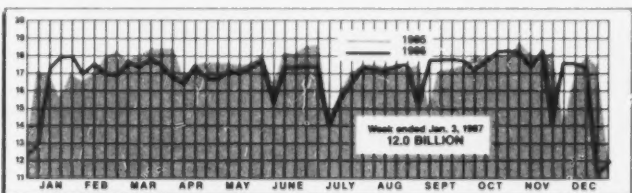
Revenue freight carloadings

Commodity	Jan. 3 week	Dec. 27 week	Dec. 20 week	Dec. 13 week
Grain	14,978	16,389	26,427	28,101
Other farm products	3,595	3,115	4,235	4,803
Metallic ores	4,402	5,331	9,853	10,383
Coal	76,803	65,311	118,999	118,127
Crushed stone, gravel and sand	6,803	4,582	10,130	11,793
Nonmetallic minerals	7,691	7,900	7,478	8,733
Grain mill products	9,486	8,207	11,079	11,344
Food and kindred products	7,560	7,131	10,795	11,337
Primary forest products	8,602	5,776	11,107	10,398
Lumber and wood products except furniture	5,267	4,952	7,781	7,417
Pulp, paper and allied products	13,165	11,462	12,132	12,511
Chemicals and allied products	22,760	18,059	24,486	23,279
Petroleum products	3,924	3,207	4,462	4,187
Stone, clay and glass products	7,078	5,464	8,451	8,899
Coke	4,128	3,775	3,527	3,837
Metals and products	7,106	5,368	6,947	7,122
Motor vehicles and equipment	4,644	10,570	19,721	22,300
Waste and scrap materials	4,888	4,608	7,902	8,217
Forwarder and shipper assn. traffic	1,515	1,980	3,022	2,986
All other carloads	47,383	46,075	74,791	72,733
LCL traffic	40	46	103	122
Total Cars Loaded	261,829	229,388	343,436	388,841
% change from previous year	(7.4)	(1.8)	0.3	(1.9)
Estimated revenue ton-miles (billions)	12.0	11.2	17.3	17.5
% change from previous year	(5.9)	(11.0)	1.7	1.0
Total: 52 weeks		1986 879.6	1985 876.7	% change 0.3

Piggyback loadings

	Dec. 27 week	Dec. 20 week	Dec. 13 week	Dec. 6 week
Trailers/containers	72,368	106,675	104,964	95,039
Cumulative total, 52 weeks				
Trailers/containers		5,011,037		9.8
% change from 1985				

Rail freight traffic trends



This is the second commercial RoadRailer order to be placed; earlier, RoadRailer subcontracted for 250 units to Stoughton Trailers on an order from Norfolk Southern. Meanwhile, RoadRailer, a subsidiary of Duchossois Industries, said that a number of other manufacturers would be considered for future orders, including Dorsey Trailers, Miller Trailers, Great Dane Trailers and Utility Trailer.

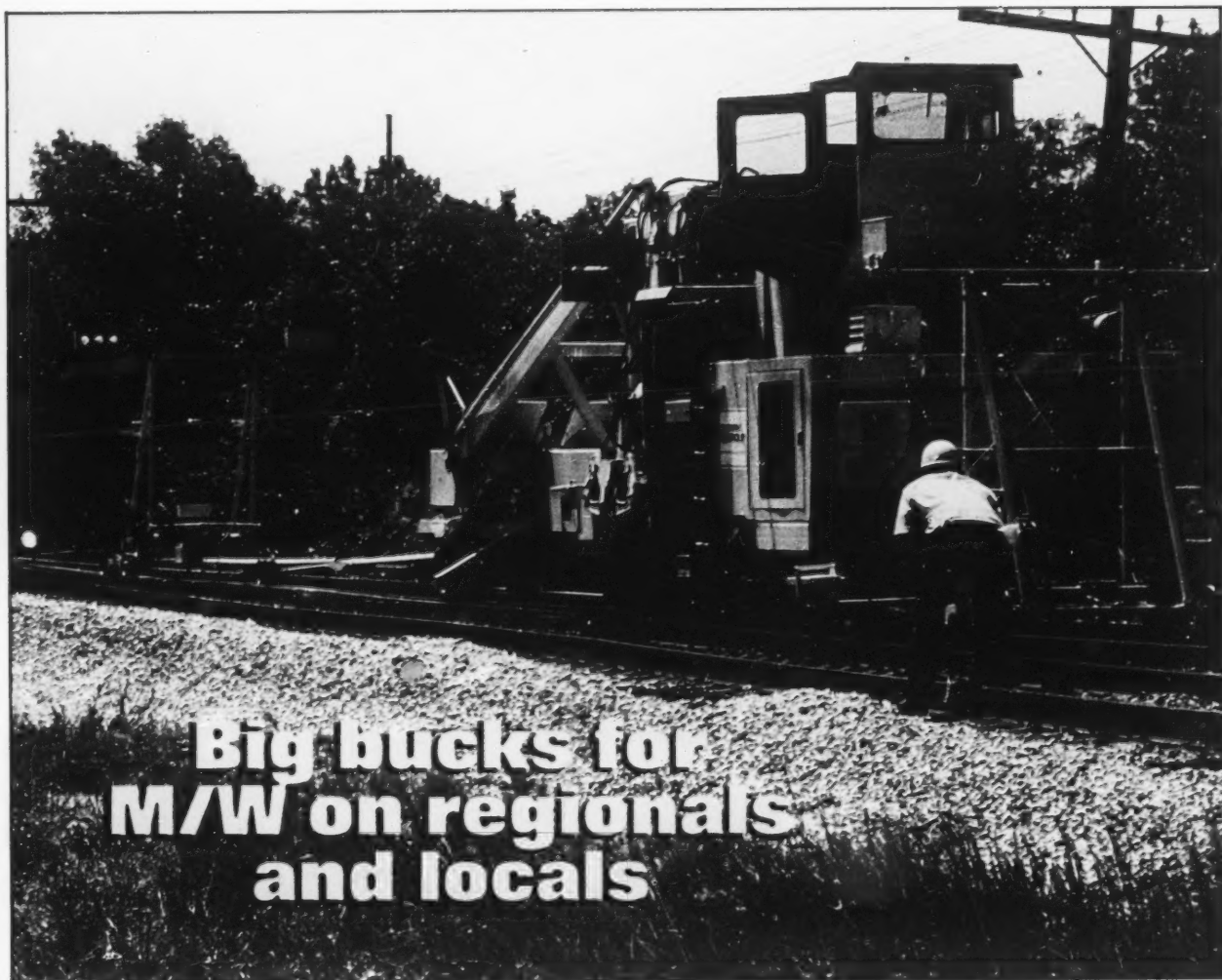
Freight car and locomotive production statistics for calendar 1986 were not available at press time.

Railway Age

...for the new age of railways

March 1987

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**Big bucks for
M/W on regionals
and locals**

**A railroader's guide
to Washington**

**New Orleans: New life
for a landmark line**

Railway Age

...for the new age of railways

March 1987

Features

30 Big bucks for m/w on regionals and locals

Nearly 500 non-Class I railroads with more than 28,000 miles of line are an increasingly important though little-recognized factor in the track-and-structures marketplace.

34 A railroader's guide to Washington

Members of the 100th Congress and other key Washington contacts are included in the 1987 edition of the *Railway Age* Unit Rail Anchor name-rank-and-phone-number guide.

47 Monitoring cabooseless trains

End-of-train electronic devices are proving to be not only reliable substitutes for cabooses; in many applications they have also proved to be safer.

50 Keying shippers into information systems

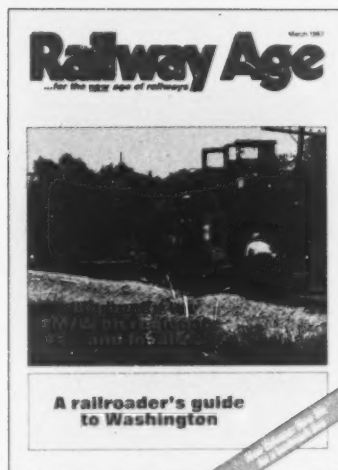
Railroads take different approaches to customer-service centers, but a common denominator is the customer-friendly computer—and the human touch remains.

53 Traction: The ac alternative

As several ongoing tests are demonstrating, the technological problems have been solved, and low-maintenance ac drive appears to be the wave of the future.

65 New Orleans: New life for a landmark line

A \$44-million rehabilitation program will ensure modern service for the St. Charles Streetcar Line's 22,000 daily riders while preserving its historic character.



Multi-million-dollar track rehab under way on Chicago South Shore & South Bend.

Update

- 23 UP forms company to market ATCS; BN extends ARES test
- 24 Harmon broadens customer base
- 24 CSX line becomes the KWT Railway
- 26 Computer helps GTW assign locomotives
- 26 C&NW negotiating 333-mile sale
- 26 ICC delays decision on SFSP reopening
- 28 El Paso facility doubles SP capacity
- 28 CSX, Sea-Land win ICC nod for merger
- 28 BN, Conrail cut stack transit times
- 28 Workers help keep Gunderson competitive
- 28 Shipper associations merge into Nu-Trans

- 28 Atlanta terminal is CSX's biggest
- 28 Chemical Leaman adds rail/truck transfers
- 29 APL will offer service to Hawaii
- 29 APC combines domestic operations
- 29 Dart will expand container service
- 62 Carnegie Mellon plans High Speed Center
- 62 Toronto Transit ridership tops forecast
- 62 Bechtel wins San Diego contract
- 62 Push-pull cars will serve Atlantic City
- 62 CTA sets new safety record
- 62 FHSRC engages land consultants
- 62 New York to open two new segments
- 62 Transit Expo expects 360 exhibitors

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on Labor
- 61 In Transit
- 74 Publisher's Perspective

Departments

- 8 Meetings
- 13 Industry Outlook
- 14 Market Outlook
- 66 People in the News
- 67 Products
- 73 100 Years Ago

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Market Outlook

Equipment

Alaska Railroad: Awarded a \$4.1-million contract to Daewoo Heavy Industries of South Korea for the supply of eight passenger cars to be delivered by the summer of 1988. The order calls for six coaches and two food service cars to replace older equipment on the Anchorage-Fairbanks run.

Massachusetts Bay Transportation Authority: Awarded a \$34-million contract to Bombardier for the supply of 40 commuter cars, with options for an additional 90 cars valued at \$80 million. The cars will be similar to those ordered by New Jersey Transit and the New York Metropolitan Transportation Authority; they are based on a Pullman design, now Bombardier's property following the company's recent acquisition of Pullman Technology Inc. (RA, Feb., p. 51).

New York City Transit Authority: Awarded a \$3-million contract to Stone International for 160 sets of air conditioning equipment to be installed on R-33 cars, with an option for an additional 32 sets. Delivery will begin in March.

Facilities

Indian Railways: Awarded three contracts to the Farinon Division of Harris Corp. for the supply of microwave communications equipment valued at more than \$8 million. One contract calls for a Harris Farinon analog microwave-radio relay system on trunk routes throughout India. A second calls for digital microwave-radio equipment to monitor traffic and provide point-to-point communications between stations throughout the eastern region. A third calls for equipment for a computerized reservations system in northern India.

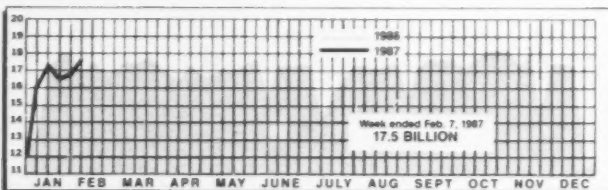
Union Pacific: Will spend \$38 million this year on new computer and communications equipment, including almost \$18 million for new mainframe computers and related equipment and \$10 million for installation of a new train dispatching center at North Kansas City, Mo. Some of the new equipment will replace obsolete units, some will support growth in existing systems, and some will be used in new applications.

Revenue freight carloadings

Commodity	Feb. 7 week	Jan. 31 week	Jan. 24 week	Jan. 17 week
Grain	27,308	25,235	23,924	26,245
Other farm products	3,764	4,190	4,619	5,459
Metallic ores	12,955	11,890	12,999	11,361
Coal	112,693	100,400	104,537	108,677
Crushed stone, gravel and sand	10,265	8,974	9,516	11,498
Nonmetallic minerals	9,243	7,186	8,360	8,350
Grain mill products	11,192	11,418	11,381	11,142
Food and kindred products	11,615	11,025	10,942	11,322
Primary forest products	11,023	10,320	9,508	10,966
Lumber and wood products except furniture	7,775	8,608	8,128	7,889
Pulp, paper and allied products	12,992	13,574	12,936	13,217
Chemicals and allied products	26,013	26,043	24,863	26,400
Petroleum products	4,676	5,163	4,661	4,637
Stone, clay and glass products	8,894	7,948	8,274	9,038
Coke	4,311	3,838	3,923	4,069
Metals and products	8,457	8,332	7,631	8,063
Motor vehicles and equipment	22,290	21,939	21,165	20,395
Waste and scrap materials	8,681	8,085	8,091	8,599
Forwarder and shipper assn. traffic	3,159	2,933	2,907	2,880
All other carloads	74,050	69,573	66,545	72,087
LCL traffic	101	113	84	100
Total Cars Loaded	391,457	366,787	364,994	382,394
% change from previous year	2.2	(0.9)	(7.4)	(2.1)
Estimated revenue ton-miles (billions)	17.5	16.8	16.5	17.2
% change from previous year	0.5	(0.2)	(7.8)	(3.2)
Total:	1987	1986	% change	
6 weeks	96.1	99.8	(3.7)	

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Piggyback loadings

	Jan. 31 week	Jan. 24 week	Jan. 17 week	Jan. 10 week
Trailers/containers	94,185	92,550	92,789	89,984
Cumulative total, 5 weeks	436,105			
Trailers/containers	2.2			

% change from 1986

Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	December 1986	12 months 1986	1985	December 1986	1986	1985	Jan. 1, 1986	Average Backlog 1986	1985
Built new by carbuilders	1,954	11,508	11,674	1,594	12,426	9,510	2,677	3,467	3,405
Built new in RR shops	0	0	406	0	0	0	0	0	23
Built new—total	1,954	11,508	12,080	1,594	12,426	9,510	2,677	3,467	3,428
Rebuilt	0	95	0	0	95	0	0	10	0
TOTAL	1,954	11,603	12,080	1,594	12,521	9,510	2,677	3,477	3,428
Locomotives (new and rebuilt)	10	392	636	N/A	N/A	N/A	3	112	207

Source: Transportation Div., AAR and American Railway Car Institute

Productivity: The old yardsticks don't always apply

Washington columnists had a certain kind of fun earlier this year, writing about the pay increases that members of Congress (and others in government) would get unless both the Senate and the House voted "No" in a timely fashion. Sports-writers had a certain kind of fun, writing about what baseball players were demanding in arbitration sessions. Business writers were waiting to see what kind of bonuses the captains, or generals, of industry would win from boards of directors. Ordinary working folks, union and non-union, read the newspapers, watched television—and wondered about it all.

First, government. There is a perception that the country can't get "the best and the brightest" to go to Washington unless the b. and the b. get paid what they would be paid, maybe, back home in the good old private sector. In a way, however, there's also a perception that a government mired in deficits wants more money for the people miring it in deficits. And never mind that a few years in government service, at that "low" pay, has been known to open the golden door for those who made the "sacrifice."

Then, sports, where a body-fat count seems to mean more than an SAT score. Taking just the baseball example, if an employee of a company in some other enterprise managed to do it right one time out of four, he'd be fired. In baseball, .250 hitters want and get hundreds of thousands of dollars.

Then, industry. Results may not be all that good, but still the bonuses seem to roll, sometimes with exquisite timing, as with the automaker that got concessions from its union people and almost simultaneously announced the bonus schedule.



GUS WELTY

But, what about railroad employees? By the latest numbers, railroad employees average about \$45,000 a year in total compensation, wages and fringes. That's not bad. And in the great majority of cases, it's earned.

Very few railroad employees are free-loaders. Very many railroad employees work under adverse conditions, with unpredictable schedules, and sometimes with supervisors who lack the basic skills in dealing with people. Very few railroad employees are out there trying to mess up or even doing it accidentally. Very many railroad employees like what they're doing and wouldn't trade jobs (well, maybe some of them would, for those jobs discussed earlier).

Railroad employees like to think of themselves as productive, and by the traditional measurements they are productive.

Trouble is, the traditional measurements are not always the ones that count these days, not with deregulation, not with offshore competition battering U.S. industry and eroding the economy, and not with a coterie of special-interest groups demanding railroad reregulation.

One example: Had there been true productivity of both labor and capital, there probably would not be a "regional-railroad" movement today.

Rail union leaders know this. Some of them have accepted the fact, at least for now, others have not.

Those who have not accepted it are running a considerable risk, the risk that they will someday be called to account for destroying jobs, jobs that could be preserved if union philosophy changed to the point where it could accept change.

Some entrepreneurs want nothing to do with unions. Generally speaking, they're the small ones. Entrepreneurs taking up the challenge of operating regional railroads know that they will have unions and that they will have to make agreements with those unions. The entrepreneurs offer something. They offer jobs, and in a number of cases they offer the chance for the employee to share in success. The entrepreneurs also demand something. They demand, above all else, the ability to provide customer-oriented service, which means the ability to peel the crust from "standard" Class 1 railroad operating agreements (non-op agreements as well) and have the flexibility to give the customer what he needs, when he needs it, at an acceptable cost.

Rail labor leaders keep talking about "job protection."

But when you come down to it, if labor's demands force railroads (small and large) into the tank, what "job protection" is there? To put it another way, if rail labor learned nothing from the Rock Island and the Milwaukee Road bankruptcies, then rail labor has to be judged incapable of learning.

Class 1 railroad employment

Employee Group	No. of employees, mid-month count		Percent of change January 1987 from	
	January 1987	January 1986	January 1987	December 1986
Total—all employees	247,734	d	10.97	d 3.70
Executives, officials and staff assistants	12,541	d	6.55	d 1.55
Professional and administrative	46,562	d	11.34	d 1.91
Maintenance of way and structures	46,230	d	11.07	d 7.55
Maintenance of equipment and stores	48,288	d	9.43	d 2.23
Transportation (other than train and engine)	16,603	d	13.11	d 4.59
Transportation (train and engine)	77,510	d	11.83	d 3.43

Railway Age

...for the new age of railways

April 1987

C8400-1
6/30/87

THE ARCHITECTS OF CHANGE.

"We're in a period of transition in intermodal. At Trailer Train, we try to anticipate change, so that we are prepared when it comes."



**Raymond C.
Burton, Jr.**

Amtrak goes for growth
in mail, express revenue

Railway Age

...for the new age of railways

April 1987

Features

31 Architects of change: Trailer Train's Raymond C. Burton, Jr.

TT's CEO sees his company's mission as "providing high-quality equipment in adequate quantities and managing it well"—and so far, it's "mission accomplished."

39 The Susquehanna's amazing comeback

Only a few years out of bankruptcy, NYS&W has added mileage, more than tripled conventional tonnage, and captured double-stack traffic through a shrewd deal with Sea-Land.

43 BN: The story behind PHONE-TRACE

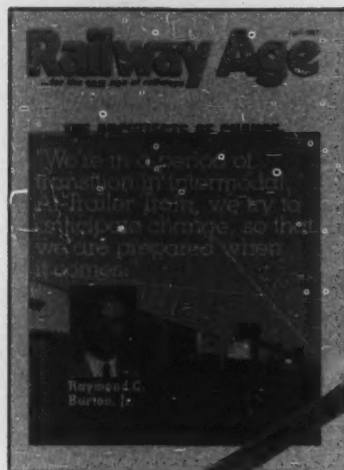
Burlington Northern's customer-information system combines sophisticated voice response equipment, provided by Voice Computer Technologies, with shipment tracing software.

45 Sales blitz, Santa Fe style

ATSF's new Business Development Department is using a variety of marketing tools to spread the word about Quality Service Network trains. There's even a "free trial" offer in the kit.

48 Track recycling: A booming business

Old track never (or at least very seldom) dies. More and more, cost-conscious carriers, big and small, are recycling rail and other still-useful track materials.



Page 31

55 Amtrak: The head-end push

Amtrak continues to narrow the gap between revenues and expenses—and one reason is a mail-and-express business whose growth has been spurred by a new head-end fleet.

56 Automation at the station

New rail transit systems have reaped huge benefits from automatic ticketing and collection equipment, and now some older systems are climbing on the bandwagon.

Update

- 22 TARCO enters the lightweight coal-car derby
- 23 Missile trains set to roll in 1991
- 23 Norfolk Southern plans headquarters move
- 24 CN asks: What price competitive access?

- 24 Soo will serve new pasta plant
- 26 Lake States fails to "stand alone"
- 26 Used ties will fuel cogeneration plant
- 29 BN fields more "Expediter" trains
- 29 APL adds four containerships
- 29 "One-stop shopping" is CN's goal
- 29 Britain tests bi-modal vehicle
- 29 NS handles new American President train
- 29 Bankruptcy leads to container round-up
- 54 Amtrak maps \$86.7-million capital program
- 54 New ARR cars are designed for viewing
- 54 May opening set for Pittsburgh line
- 54 PATH allocation totals \$760 million
- 54 Europe offers new high speed network

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on labor
- 53 In Transit
- 66 Publisher's Perspective

Departments

- 8 Meetings
- 13 Industry Outlook
- 14 Market Outlook
- 44 100 Years Ago
- 58 People
- 61 Products
- 61 New Literature

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Market Outlook

Capital expenditures

Amtrak: An FY 1988 capital program of \$86.7 million includes provision for new diesel and electric locomotives and conversion of older Metroliner cars into push-pull equipment. The program is contingent on a federal capital grant. (For details, see p. 54.)

PATH: A five-year, \$760-million capital program starting this year earmarks \$180 million for cars, \$200 million for shops and yards, \$120 million for safety, \$95 million for electrical improvements, \$90 million for stations and the remainder for miscellaneous projects. (For details, see p. 54.)

Equipment

Burlington Northern: Acquired an additional 30 stack cars, bringing its operating pool to 1,000 wells. Through an agreement with Conrail, BN now provides daily stack-train service from the Pacific Northwest to the East Coast, with sixth-morning arrival.

New York Metropolitan Transportation Authority: Ordered 200 R-68 cars, for the New York City Transit Authority, from Kawasaki at a cost of \$958,000 each. NYCTA President David L. Gunn said the decision to purchase the cars from Kawasaki rather than from Westinghouse-Amrail, which earlier won orders for 425 R-68 cars, was "basically a matter of price." Westinghouse-Amrail, a U.S.-French consortium, had offered to build the additional cars for \$1,012,000 each.

Facilities

Egyptian National Railway: A \$3.2-million contract, funded by the Canadian International Development Agency, has been awarded to Canadian Pacific Consulting Services Ltd., subsidiary of Canadian Pacific Limited, to improve stores management. The 32-month project involves development and implementation of a computer-based stores management and inventory control system for maintenance of locomotives supplied by CIDA.

Iowa Interstate Railroad: A \$3.5-million 1987 track program calls for installation of 10 miles of cwr relay rail, insertion of 100,000 crossties, and surfacing of 200 miles.

MNVA Railroad: Has budgeted \$1.6 million for installation of up to 40,000 crossties, surfacing of 25 miles, and rebuilding of 17 grade crossings.

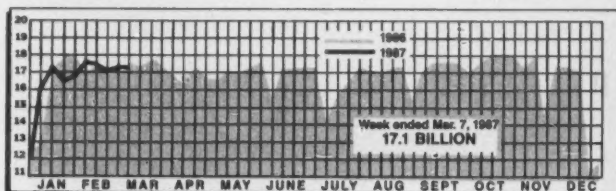
Wisconsin & Southern: Will spend \$550,000 for installation of 1.5 miles of relay rail, insertion of 5,800 crossties, and surfacing of 71 miles.

Revenue freight carloadings

Commodity	March 7 week	Feb. 28 week	Feb. 21 week	Feb. 14 week
Grain	28,128	26,566	26,106	26,692
Other farm products	3,385	3,285	3,236	3,405
Metallic ores	13,890	14,566	12,144	12,343
Coal	104,571	103,521	107,280	108,316
Crushed stone, gravel and sand	11,380	9,910	9,539	10,656
Nonmetallic minerals	8,617	9,068	8,859	8,785
Grain mill products	11,128	11,429	11,382	11,589
Food and kindred products	11,165	11,185	10,651	11,509
Primary forest products	10,536	10,179	10,220	11,251
Lumber and wood products except furniture	7,993	6,917	8,479	8,167
Pulp, paper and allied products	12,750	13,548	12,963	13,170
Chemicals and allied products	26,402	28,860	27,326	26,775
Petroleum products	4,732	4,754	4,791	4,675
Stone, clay and glass products	9,988	9,116	8,457	9,669
Coke	4,495	4,187	4,227	4,238
Metals and products	8,201	8,747	7,949	9,007
Motor vehicles and equipment	21,506	22,183	21,640	22,241
Waste and scrap materials	6,694	8,761	8,470	8,895
Forwarder and shipper assn. traffic	2,999	3,065	2,598	2,862
All other carloads	73,856	72,508	71,437	73,636
LCL traffic	115	99	92	103
Total Cars Loaded	384,533	384,526	377,848	387,984
% change from previous year	0.1	(1.7)	1.6	5.2
Estimated revenue ton-miles (billions)	17.1	17.1	17.0	17.4
% change from previous year	(1.0)	(2.3)	(1.3)	(3.4)
Total:	1987	1986	% change	
10 weeks	164.7	168.1	(2.0)	

Rail freight traffic trends

Billions ton-miles (Estimated)



Source: Association of American Railroads

Piggyback loadings

	Feb. 28 week	Feb. 21 week	Feb. 14 week	Feb. 7 week
Trailers/containers	98,452	94,521	100,117	98,531
Cumulative total, 9 weeks	831,581			% change from 1986
Trailers/containers				3.3

The American Railway Car Institute and the Association of American Railroads are now compiling freight-car and locomotive production statistics on a quarterly rather than a monthly basis. The first quarterly report will be published in the May issue.

Lines on Labor

Can railroads learn a lesson from Ford's book?

The speaker was Donald E. Petersen, chairman and chief executive officer of Ford Motor Co. He was talking about today's buzz-phrase, "corporate culture," but he was talking in eminently practical terms. He was talking about what he called Ford's "governing document," its statement of Mission, Values and Guiding Principles (MVGP for short).



GUS WELTY

MVGP at Ford has six principles:

- Quality comes first.
- Customers are the focus of everything we do.
- Continuous improvement is essential to our success.
- Employee involvement is our way of life.
- Dealers and suppliers are our partners.
- Integrity is never compromised.

Living by the MVGP, Petersen said, "requires a deliberate openness in all of Ford's communications." And then he talked about employees, and employee communications. This is what he said:

"Communications with our employees come at the top of the list. In an MVGP state of mind, one of our fundamental objectives is to establish trust with our employees. One avenue is by communicating with them honestly on the facts about the company, its actions and its point of view. This must include our problems and controversies, as well as our attributes and achievements.

"I believe that what we're trying to do, for and with our employees, supports 'the worthiness of life.' This is a concept introduced to us by Dr. Peter Koestenbaum, professor of philosophy at the University of Michigan and consultant to the Ford Executive Development Center. . . .

"People, Dr. Koestenbaum says,

need to feel worthy—a need that is reflected in four important desires: The desire to be self-starters, or entrepreneurs; the desire to exhibit courage, or take responsibility; the desire for love or belonging, or being part of the team; and the desire to stand for something, to have values, principles, integrity.

"At Ford, we want these things for our people so that they can know they are participating, productive, important, worthy, involved, courageous members of our corporate team. All these things are embodied in the spirit and the letter of the MVGP.

"For example, our communications with employees let them know both good news and bad. And by knowing, they become part of it, for better or worse. That's an aspect of genuine employee involvement."

How to do this? In many cases, Petersen said, "breaking news can be disseminated almost immediately through FCN, the Ford Communications Network, our own 200-location television network that is replacing bulletin boards throughout the company, and our employee newspaper, *Ford World*, can provide coverage in depth."

Ford was No. 1 in profits in the automobile industry last year, the first time it was No. 1 since Henry was selling the Model T or Model A, and General

Motors was only a captain. Ford claims great strides and great results in surveys regarding product quality. You have to wonder how marketers come up with nameplates such as Taurus (why not Sagittarius?) or Sable (why not Mink?), but Ford is obviously doing things right.

One of the things Ford is doing right, or trying to do right, has to do with getting its workers involved.

This is something that railroads and railroad-owning companies have to do more of. Newcomers to the industry look at high labor costs and at the number of rail unions and at dragged-out contract negotiations, and their look is a look-askance. They have a point.

But there is still a residual pride in the railroad industry on the part of many if not most railroad employees. Given something they can be proud of, most railroad employees will work their tails off for it, and examples of that are not hard to find.

But there has to be communication, what Ford's Donald Petersen was talking about. And in so many cases, on so many railroads, it's lacking or it's not timely or it's limited to what management thinks should be communicated.

The news may be good, the news may be bad, but if it's news it ought to be passed along to the people who work for and with a company.

Class 1 railroad employment

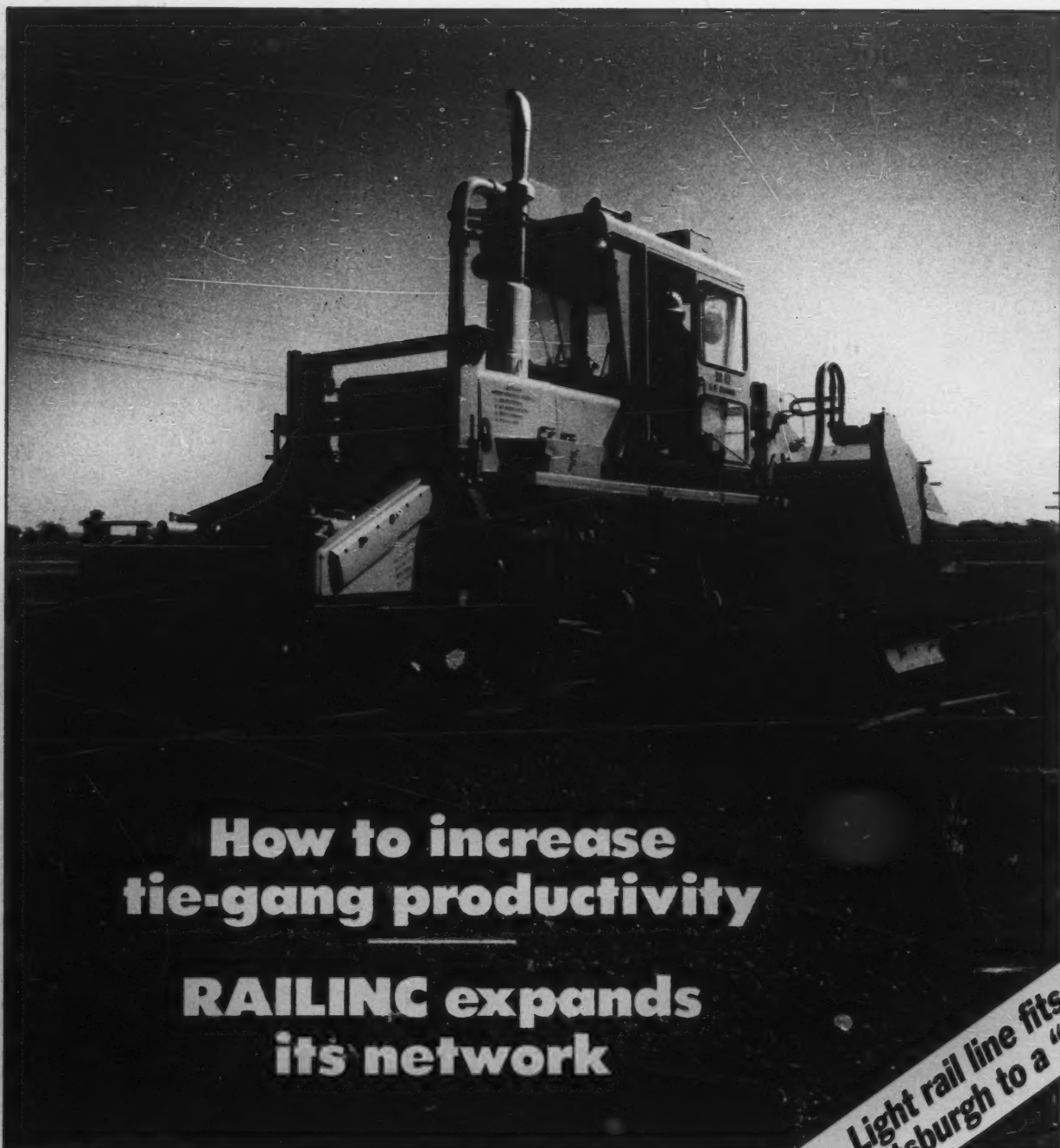
Employee Group	No. of employees, mid-month count February 1987	Percent of change February 1987 from	
		February 1986	January 1987
Total—all employees	244,989	d 10.81	d 1.01
Executives, officials and staff assistants	12,343	d 7.87	d .41
Professional and administrative	45,854	d 11.85	d .50
Maintenance of way and structures	44,240	d 11.80	d 3.71
Maintenance of equipment and stores	47,914	d 9.03	d .80
Transportation (other than train and engine)	16,411	d 12.05	d 1.09
Transportation (train and engine)	78,227	d 10.89	d .05

Railway Age

...for the new age of railways

May 1987

C8400-1
6/30/87



**How to increase
tie-gang productivity**

**RAILINC expands
its network**

**Light rail line fits
Pittsburgh to a "T"**

Features

23 How to increase tie-gang productivity

In just four years, Santa Fe's mechanized tie gangs nearly doubled their daily production. The practices of CSXT and Union Pacific also provide useful pointers.

27 RAILINC spreads its net

This wholly-owned, for-profit subsidiary of the AAR is offering a widening range of services and is attracting an increasing number and variety of customers.



p. 29

29 Norfolk Southern: A power play pays off

NS says its microprocessor-controlled locomotives are everything the builders promised—and more. NS's next power move could be to coal-fired diesels.

36 BN: A "first" in turnouts

A spring-nose-frog turnout mounted on concrete ties is going into test service on a heavy haul coal line. A similar turnout with wood ties was put in last year.



p. 43

43 Pittsburgh awaits "T"-Day

Plagued by funding delays and some faulty construction, the Stage I LRT system is at last complete and is set for a ceremonial opening late this month.



How to increase tie-gang productivity
RAILINC expands its network

Light rail line the Pittsburgh to a city

Cover photo, Union Pacific

Comment

- 6 Inside
- 11 Watching Washington
- 14 Lines on labor
- 40 In Transit
- 58 Publisher's Perspective

Departments

- 9 Industry Outlook
- 10 Market Outlook
- 16 Meetings
- 35 100 Years Ago
- 38 Letters
- 49 Products Report
- 53 People in the News

Update

- 17 Electro-Motive is here to stay
- 18 Kansas company buys 104 miles of UP
- 18 Harmon to acquire tie-processing company
- 18 Grain by unit train: a BN milestone
- 19 Lake States to Wisconsin Central?
- 19 HPIT update set for Chicago

- 20 Procor opens full-service shop in Ontario
- 20 ICG and USX sign three-year contract
- 20 Reed fills in as Schmidt quits SFSP
- 20 CSX enters the cogeneration field
- 20 Duval purchases 76 miles of CSX
- 20 Fruit Growers adds 450 RPL cars
- 21 UP will offer BulkTainer Service
- 21 UP plans new intermodal terminal

- 21 Larger RoadRailers delivered to NS
- 21 Irel purchases Flexi-Van fleet
- 41 Chicago retains investment advisors
- 41 Metra posts new on-time records
- 41 Sumitomo wins Los Angeles order
- 41 Pennsylvania gets a W. German offer
- 41 Taipei selects U.S. consultants
- 41 Refurbished station is work of art

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Market Outlook

Equipment

Canadian National: Delivery of 20 new SD50 locomotives from General Motors' Diesel Division is to be completed in June. The order is valued at \$40 million (Canadian).

Southern Pacific Transportation: Ordered 60 micro-processor-equipped diesel-electric units at a cost of more than \$60 million and has an option to acquire 20 additional units. General Electric will build 40 4-axle, 3,900 hp B-39-8 units for delivery in the third quarter of 1987; Electro-Motive Division of General Motors will build 20 4-axle, 3,800 hp GP-60 units for delivery in the first quarter of 1988. SPT is now testing three GP-60 prototypes, and has an option to acquire 20 additional GP-60s for delivery later in 1988.

Facilities

Amtrak: Awarded a contract valued at more than \$3 million to Harmon Industries for the design, engineering, manufacture, delivery, and system integration for signaling equipment on the 55-mile Philadelphia to Atlantic City line. Noting that this is the largest order the company has ever received exclusively for Harmon equipment, the company's president, Robert E. Harmon, said the contract calls for major contributions from all of the Harmon subsidiaries. Modern Industries will supply cases, bungalows and signal hardware; Harmon Electronics, crossing warning systems and code systems; and Electro Pneumatic, coded track circuits and the new Electro Logic microprocessor interlocker.

Norfolk Southern: Awarded a multi-year contract to Harmon Industries for the supply of metal housing units for grade-crossing warning control and related equipment. The approximately \$3-million annual contract runs through 1989. Norfolk Southern expects to take delivery of more than 100 cases each year of the contract.

PATH: Awarded \$5.3 million in contracts for equipment to be installed in new substations and switching stations—\$4 million to Control Power Corp. of Canton, Ohio, for ac and dc switchgear assemblies; and \$1.3 million to BBC Brown Boveri of Blue Bell, Pa., for transformer/rectifier units.

Revenue freight carloadings

Commodity	April 11 week	April 4 week	March 28 week	March 21 week
Grain	26,310	26,325	25,744	26,894
Other farm products	3,379	3,190	3,777	4,179
Metallic ores	17,431	13,943	17,249	15,182
Coal	107,658	92,920	105,820	107,541
Crushed stone, gravel and sand	14,208	13,411	13,239	12,351
Nonmetallic minerals	9,193	10,350	8,809	10,206
Grain mill products	10,690	10,826	10,920	10,912
Food and kindred products	10,550	11,153	10,799	11,236
Primary forest products*	10,582	9,980	10,860	10,609
Lumber and wood products except furniture	8,213	8,309	8,766	8,158
Pulp, paper and allied products	12,130	12,758	12,978	12,609
Chemicals and allied products	26,193	27,375	27,878	28,304
Petroleum products	4,719	4,794	4,694	4,952
Stone, clay and glass products	10,670	10,466	10,108	10,031
Coke	4,773	5,127	5,016	4,617
Metals and products	7,970	9,365	9,390	8,357
Motor vehicles and equipment	20,714	20,586	21,733	21,919
Waste and scrap materials	8,611	8,573	9,033	9,015
Forwarder and shipper assn. traffic	2,826	2,838	2,841	2,767
All other carloads	74,072	76,220	75,985	74,119
LCL traffic	95	118	138	121
Total Cars Loaded	390,987	378,627	395,779	394,079
% change from previous year	0.9	3.7	8.0	1.8

Estimated revenue ton-miles (billions)	17.3	17.0	17.6	17.5
% change from previous year	1.0	5.9	6.8	1.1

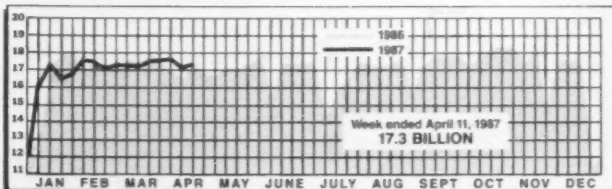
Total:	1987	1986	% change
15 weeks	251.3	251.9	(0.2)

Piggyback loadings

	April 4 week	March 28 week	March 21 week	March 14 week
Trailers/containers	100,772	102,618	98,489	101,231
Cumulative total, 14 weeks				
Trailers/containers		1,333,855		3.7

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED		ORDERED		ON ORDER AND UNDELIVERED	
	1st quarter 1987	1st quarter 1986	1st quarter 1987	1st quarter 1986	1st quarter 1987	1st quarter 1986
Built new by carbuilders	2,687	1,561	3,860	3,177	3,850	3,375
Built new in RR shops	0	0	0	0	0	0
Built new—total						
Rebuilt	0	50	0	50	0	0
TOTAL	2,687	1,611	3,860	3,227	3,850	3,375
Locomotives (new and rebuilt)	22	58	N/A	N/A	30	199

Source: Transportation Div., AAR and American Railway Car Institute

June 1987

Railway Age

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THE ARCHITECTS OF CHANGE.

2
Brendan McNally
Congressional Info Service Inc
4520 East-West Highway
Bethesda MD 20814-3389



"We have to get some of the traffic that is now moving by non-rail modes. Buy, or coordinate—we can move in both directions."

NJ Transit: Equipping
a modern-day shop

Railway Age

...for the new age of railways

June 1987

Features

31 The architects of change: Arnold B. McKinnon

"Buy, or coordinate—we can move in both directions," says Norfolk Southern's new chief as he describes NS's planned progression from a railroad company to a total distribution and transportation system.

35 Is concrete's day dawning?

BN's commitment to a multi-year concrete tie program, and a major test installation on UP, are signs that the wood tie may face a challenge to its long-time supremacy.



p. 39

39 ATCS: On time and on target

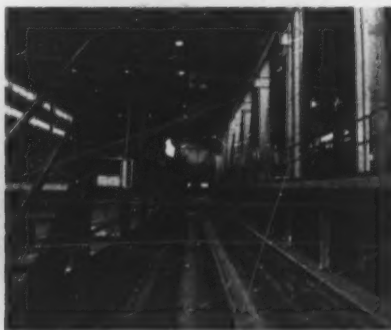
Moving swiftly into a new era of advanced train controls are BN with its satellite-positioning system and UP and other railroads with transponder-based systems.

42 Reducing the risks of regional railroading

Two experts warn against "excessive reliance on traffic estimates or revenue commitments" from existing shippers. It could be, they say, "a blueprint for failure."

55 A showcase shop takes shape at Kearny

The new, \$120-million Meadows Facility of NJ Transit Rail Operations is designed with an eye on the future—for example, a switch from dc to ac traction.



p. 55

60 Atlantic City bets on rail

NJ Transit, Amtrak and Atlantic County are spending \$101 million to restore passenger service to an old resort city that has become the gambling capital of the East.



p. 31

Comment

- 8 Inside
- 19 Watching Washington
- 20 Lines on labor
- 70 Publisher's Perspective

Departments

- 10 Meetings
- 13 Industry Outlook
- 16 Market Outlook
- 45 Vehicle Track Systems Newsletter
- 63 Products Report
- 65 People in the News
- 69 100 Years Ago

Update

- 22 Harmon forming a "re-sell" subsidiary
- 23 Safety gold medal goes to the SP
- 23 Shop workers return at reduced pay
- 23 The Pioneer route: A stock offering
- 24 Ellwanger named head of Simmons-Boardman railway division
- 26 Paducah & Louisville on a fast track
- 26 The "Nancy Hanks" rides again
- 26 GE Railcar fleet exceeds 34,000
- 27 WRP runs 5,000th Powder River train
- 29 Double-stacking with a regional touch
- 29 Burlington Northern redefines lcl
- 29 CN will stick with single-decks
- 29 Duchossois Industries acquires Railmaster
- 51 Houston: A place for light rail?
- 51 New York studies West Side options
- 51 DART will submit bond sale to a vote

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Market Outlook

Equipment

GSI Engineering/Buckeye: Will supply trucks for 30 commuter cars that Bombardier will build for the Southeastern Pennsylvania Transportation Authority, and for 40 cars that Bombardier is supplying to the Massachusetts Bay Transit Authority. An order was received earlier for trucks for 67 cars being built for MBTA by Messerschmitt-Bolkow-Blohm. Buckeye manufactures the trucks to the GSI Engineering design.

NJ Transit Rail Operations: Ordered an additional 13 Comet II cars from Bombardier, bringing total orders to 23. The new order, which will cost in excess of \$10 million, will add 1,700 seats to trains in the Northeast Corridor and on the North Jersey Coast Line and Morris and Essex lines, all of which are experiencing ridership increases. Delivery is to be completed about a year from now.

Pullman Leasing: Placed an order with Trinity Industries for 100 5,850-cubic-foot-capacity covered hopper cars for plastic service.

Santa Fe: Will repair 600 jumbo covered hopper cars at its Cleburne, Tex., shops. Production will average 15 cars per week and will be completed by the end of 1987, at a cost of approximately \$2.5 million. Santa Fe expects that the program will add 12 years to the useful life of the cars. J.R. Fitzgerald, vice president-operations, said the program is designed "to enhance our supply of high-quality cars for grain shippers."

Facilities

BC Rail: Will install a basic computer-aided train control system based on Level 10 parameters of the Advanced Train Control System program. Train-end engine crews will not be significantly affected but dispatchers will be; paperwork will be greatly reduced since all orders and authorities will be stored electronically and the train sheet will be displayed on a screen.

CSX Rail Transport: Awarded a \$9-million contract to the Union Switch & Signal Division of American Standard for consolidation of all train dispatching operations into a new etc center at Jacksonville, Fla.

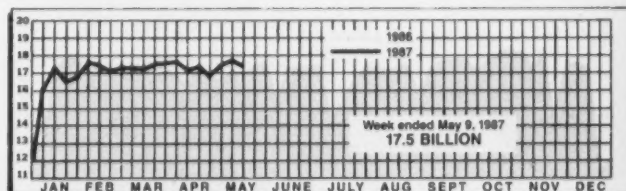
Los Angeles County Transportation Commission: Awarded a contract valued at \$13.642 million to a joint venture of Case International Co. and J.H. Pomeroy & Co. for the supply of 231,000 concrete cross-ties for the Los Angeles-Long Beach light rail line. The ties will be manufactured at J.H. Pomeroy's facility in Petaluma, Calif., and delivered to the jobsite by Southern Pacific.

Revenue freight carloadings

Commodity	May 9 week	May 2 week	April 25 week	April 18 week
Grain	24,340	24,129	25,479	24,228
Other farm products	3,785	3,830	3,602	3,659
Metallic ores	17,935	16,925	14,890	18,222
Coal	106,377	109,519	104,550	105,075
Crushed stone, gravel and sand	15,708	16,050	15,343	14,244
Nonmetallic minerals	10,664	10,088	10,144	8,665
Grain mill products	10,909	10,861	10,523	10,377
Food and kindred products	10,932	11,158	10,998	10,221
Primary forest products	11,147	10,982	11,027	10,070
Lumber and wood products except furniture	8,239	8,906	8,655	8,139
Pulp, paper and allied products	12,478	12,777	12,640	12,355
Chemicals and allied products	26,103	28,041	28,103	25,661
Petroleum products	4,780	4,703	4,972	4,298
Stone, clay and glass products	11,073	11,274	10,918	10,145
Coke	5,083	5,194	5,169	4,765
Metals and products	8,980	10,038	9,024	8,540
Motor vehicles and equipment	20,718	21,004	18,865	17,419
Waste and scrap materials	8,165	8,632	8,106	7,670
Forwarder and shipper assn. traffic	2,793	2,732	2,551	2,542
All other carloads	75,136	75,503	71,399	71,151
LCL traffic	114	97	81	83
Total Cars Loaded	402,443	402,443	387,277	377,529
% change from previous year	4.5	4.5	0.5	(2.9)
Estimated revenue ton-miles (billions)	17.5	17.8	17.3	16.7
% change from previous year	7.2	7.9	3.9	0.5
Total:	1987	1986	% change	
19 weeks	320.7	318.0	0.8	

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Piggyback loadings

	May 2 week	April 25 week	April 18 week	April 11 week
Trailers/containers	97,670	96,304	95,669	96,260
Cumulative total, 18 weeks				% change from 1986
Trailers/containers	1,719,892			2.8

Southeastern Pennsylvania Transportation Authority: Awarded a \$12-million construction management contract to Philadelphia Transit Consultants (PTC), for reconstruction of the 65-year-old Frankford Elevated Railway. The work, which will begin this summer, will include 5.25 miles of double tracked lines, one terminal, and ten stations. PTC is a joint venture of Parsons Brinckerhoff Construction Services and Sverdrup Corp.

July 1987

Railway Age

...for the new age of railways

C8400-1
7/24/87

WILL CONGRESS DRIVE RAILROADS OUT OF THE RAILROAD BUSINESS?

Powerful, short-sighted interests are urging Congress to take action that could set off a massive shift of capital from the railroad industry to other businesses, with tragic consequences for all America.

The threat is real. The hour is late. Congress must be made to understand that railroad companies are dead serious when they say that reregulation, on top of a host of other problems, could drive some of them out of the railroad business altogether.

Brendan McNally
Congressional Info Service Inc.
4520 East-West Highway
Bethesda MD 20814-3589

2

St. Louis next in the
light rail parade?

Railway Age

...for the new age of railways

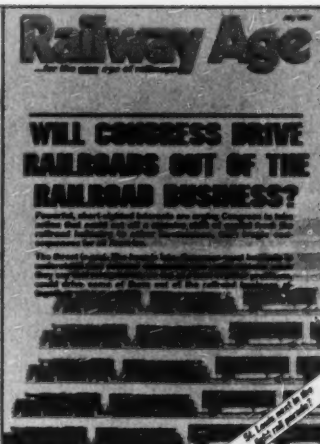
July 1987

Features

SPECIAL REPORT

- Congress at a crossroads** p. 37
- The "Cure" remedy could be a killer** p. 38
- What Congress can do to unstack the cards** p. 42

Cover drawing
courtesy Sperry
Rail Service



57 ATC for all Corridor trains?

A collision fatal to 16 people has led FRA to revive a proposal for requiring automatic train control equipment on all lead NEC motive power.

58 Light rail: Will St. Louis be next?

The Missouri/Illinois metropolis is moving swiftly on a plan to finance its Metro Link system. Use of existing rights-of-way will keep costs low.

Comment

- 6 Inside
- 19 Watching Washington
- 20 Lines on labor
- 78 Perspective

Departments

- 13 Meetings
- 15 Industry Outlook
- 16 Market Outlook
- 64 Revenues & Expenses
- 67 Products Report
- 76 100 Years Ago
- 76 Letters
- 77 People in the News

49 Teflon extends life of worn liners

Precision National Plating's teflon-impregnated spraymetal process is said to slash the cost of restoring old diesel cylinder liners by 30%.

55 ICG sells commuter lines to Metra

The Chicago-area authority expects to reap big savings from its \$28-million purchase. Metra/Electric is the ex-ICG operation's new designation.

Update

- 23 Four roads settle accounts electronically
- 23 CSX dedicates new shop complex
- 24 UP Technologies eyes broad market
- 25 NS agrees to purchase 200 miles of ICG
- 25 CP moves a viaduct—in 61 carloads
- 26 ATSF seeks to cut engine-service force

- 26 New company to buy two pieces of GTW
- 26 Soo Line wins Dow safety award
- 28 Boxcar pool ready for pilot test
- 30 NS offers separation package to engineers, firemen
- 32 Intermodal Expo '88 space is going fast
- 32 NS opens its 44th intermodal terminal
- 32 AAR offers tips on intermodal loading

- 33 Seattle, ILWU sign on-dock rail yard agreement
- 33 BN, GTW close the "Chicago gap"
- 51 Cubic installs AFC equipment at London station
- 51 BART extends Logica contract
- 51 VIA told to scrap plan for new cars
- 51 Toronto again wins top safety award
- 51 The Broadway lights its 85th candle
- 51 Long Beach loop approved by LACTC

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Market Outlook

Capital expenditures

Santa Fe: A 1987 capital program totaling \$300 million covers the remanufacture of 65 diesel-electric units, purchase of 90 multi-level auto racks, installation of 235 miles of new and 63 miles of reconditioned cwr, insertion of 1.5 million ties, and surfacing of 5,400 miles of track. Santa Fe's 1986 capital program also amounted to \$300 million.

Equipment

Loadcraft Division, Allied Products Corp.: Has received orders valued at \$20.5 million for 4,350 intermodal cargo container chassis and chassis frames. The orders came from two leasing firms, Flexivan and TracLease, and five shipping companies: American President Lines, Matson Navigation, Sea-Land, Hapag Lloyd, and NYK.

U.S. Navy: Awarded a contract to Chrome Locomotive for the remanufacture of five locomotives. Chrome was the lowest of five bidders.

XTRA Corp.: Has agreed to purchase—from Fruehauf Corp., Signal Capital Corp., and a third, unnamed company—a fleet of 10,600 intermodal trailers now operated by Availco Systems Inc. The purchase price is about \$59 million. XTRA will also assume certain trailer leases with a net current value of \$24 million.

Facilities

Amtrak/NYMTA: An agreement between Amtrak and the New York Metropolitan Transportation Authority for joint operation of New York City's Penn Station has cleared the way for a \$160-million improvement program. Together, Amtrak and the Long Island Rail Road, an MTA subsidiary, will build a \$90-million control center. LIRR will spend \$70 million on improvements to the station's lower level, which up to now it has occupied as a month-to-month tenant of Amtrak but in future will occupy on a long-term lease. LIRR has already invested some \$200 million in a new 20-acre yard two blocks west of the station which was to go into service June 22. Amtrak, meanwhile, has spent \$18 million on upper-level improvements, including new ticket counters and an expanded waiting room.

Conrail: Is spending \$20 million to install 83,000 crossties, surface more than 265 miles, and rehabilitate 220 grade crossings on its line between Chicago and Cleveland.

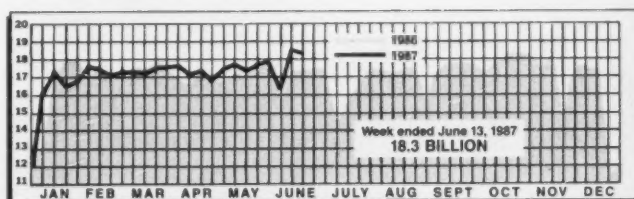
Southern California Rapid Transit District: General Railway Signal is the apparent low bidder, at \$32.5 million, for the supply of a Transit Radio System (TRS) that will control a fleet of 100 light rail cars, 5,000 buses, 100 transit police vehicles, 200 transportation vehicles, and 300 maintenance vehicles. The radio/data communications network

Revenue freight carloadings

Commodity	May 9 week	May 2 week	April 25 week	April 18 week
Grain	29,547	24,851	26,809	26,756
Other farm products	4,210	3,718	4,342	3,997
Metallic ores	18,514	16,775	19,385	15,188
Coal	121,238	99,356	111,146	111,684
Crushed stone, gravel and sand	15,972	12,851	15,757	15,828
Nonmetallic minerals	10,250	9,094	10,688	11,508
Grain mill products	10,949	10,005	11,285	11,028
Food and kindred products	11,088	9,919	10,992	10,876
Primary forest products	11,034	9,740	11,060	10,905
Lumber and wood products except furniture	8,319	8,011	8,647	8,493
Pulp, paper and allied products	12,894	13,070	12,606	12,149
Chemicals and allied products	25,696	24,082	25,723	25,585
Petroleum products	4,772	4,358	4,888	4,981
Stone, clay and glass products	11,551	9,823	11,139	11,349
Coke	5,059	4,777	5,032	5,001
Metals and products	8,784	8,628	9,130	9,131
Motor vehicles and equipment	20,608	17,050	20,360	20,706
Waste and scrap materials	8,605	7,297	8,592	8,597
Forwarder and shipper assn. traffic	2,895	2,296	2,831	2,821
All other carloads	74,963	65,262	76,110	72,873
LCL traffic	96	111	102	82
Total Cars Loaded	417,044	351,074	406,624	399,538
% change from previous year	8.3	3.8	3.7	2.4
Estimated revenue ton-miles (billions)	18.5	16.2	17.9	17.8
% change from previous year	9.6	4.7	5.1	5.9
Total:	1987	1987	% change	
23 weeks	391.1	383.4	2.0	

Rail freight traffic trends

Billion ton-miles (Estimated)



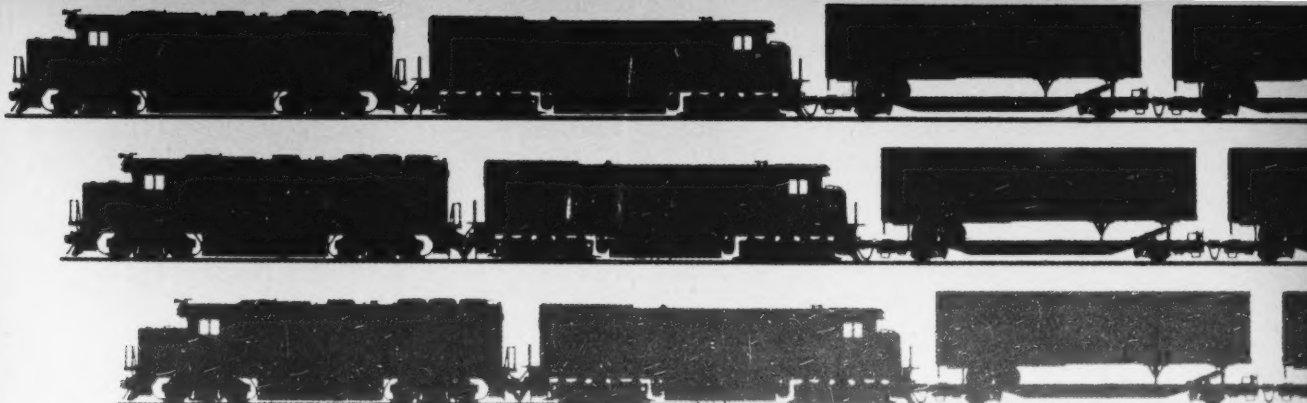
Source: Association of American Railroads

Piggyback loadings

	June 6 week	May 30 week	May 23 week	May 16 week
Trailers/containers	101,504	87,597	101,388	96,196
Cumulative total, 22 weeks				% change from 1986
Trailers/containers	2,103,349			2.9

will operate from eight base stations and will handle such information as vehicle location, passenger counts, mechanical alarms, and emergency alarms. Installation will take two years.

PATH: Directors authorized an \$8.1-million project to modify station platforms to permit the lengthening of trains between Newark, N.J., and New York City's World Trade Center from seven cars to eight cars. The project is to be completed by mid-1988.



A RAILWAY AGE Special Report

WILL CONGRESS DRIVE RAILROADS OUT OF THE RAILROAD BUSINESS?

A return to the stifling regulatory climate of pre-1980 could cause an already-beleaguered industry to disinvest in its rail network and concentrate on more productive businesses.

By GUS WELTY, Senior Editor

America's railroads today are in a desperate fight for survival.

Lined up against them are powerful and well-financed foes whose only interest is their own self-interest, who would tear the heart out of railroad deregulation, leaving the industry and the nation at the mercy of forces that could undermine a vital part of the American transportation network.

The facts are that neither the railroads nor the Interstate Commerce Commission have abused the partial deregulation granted in the Staggers Rail Act of 1980; that shippers and consumers now enjoy better rail service at a lower cost; that these improvements in service and pricing are in large part due to the changes that have come about through deregulation; and that a return to the regulation that was crippling the industry before 1980 would be disastrous—disastrous ultimately even for those interests who would dangerously weaken the rail industry for the sake of their own short-term gain.

Congressional passage of the grossly-misnamed Consumer Rail Equity Act of 1987 would lead inevitably to disinvestment

in the nation's rail network, to more railroad bankruptcies, perhaps to the staggering costs of nationalizing the railroads.

This proposed legislation is the program of Consumers United for Rail Equity, made up mostly of monopoly electric utilities and coal interests. CURE has support from a group called the Procompetitive Rail Steering Committee, made up in part of giant industrial companies whose main interest seems to be in adding to the tremendous power they already have to drive down transportation rates.

But railroads and those truly concerned with sound national transportation policy have more than just this coalition to contend with. Even with the benefits gained from the Staggers Act, the railroads' position is precarious. If they are to continue to serve the nation well, the railroads need changes which truly are in the interest of equity.

Equity demands, for example, that railroads be relieved of a labor-protection burden that only they carry. Equity demands that they be relieved of the weight of an employer-liability law that applies only to them. Equity demands that they not be saddled with tremendous additional costs to fund retirement programs. Equity demands that they be protected, as virtually every

other industry is, against the kind of secondary labor boycott that can turn a local labor-management dispute into a nationwide work stoppage. Equity demands that they gain some measure of parity with their major competitors whose payments for maintenance and improvement of their rights-of-way, the nation's highways and its inland waterways system, fall far short of meeting full costs.

Clearly, there is "equity," and then there is equity.

What CURE and its allies propose is, in no way, equitable.

Common sense would dictate that scant attention be devoted by an already-overburdened Congress to proposals such as CURE's which would ill-serve the nation by re-creating failed policy.

Reregulation proposals did not survive in the 99th Congress.

But its proponents are back, in the 100th Congress, hammering harder than ever.

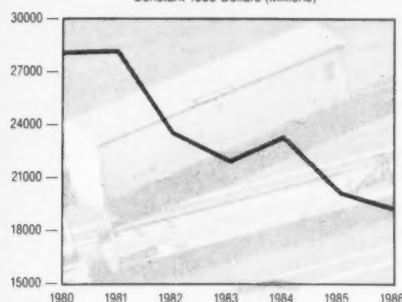
Common sense must prevail. Congress must understand that what CURE wants is not a cure, that there is in fact no disease. And that what CURE wants would be a prescription for catastrophe.

The threat is real.

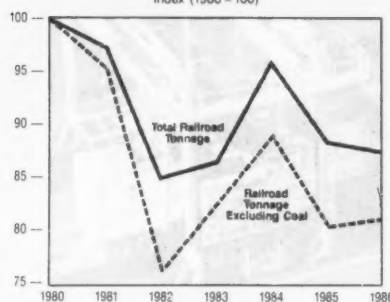
And the hour is late.

Railroad operating revenue

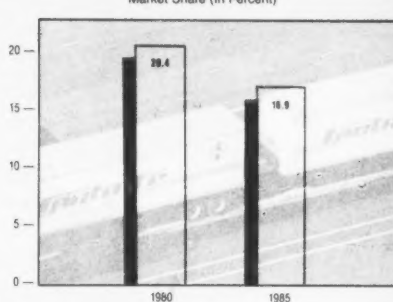
Constant 1980 Dollars (Millions)

**Railroad tonnage originated**

Index (1980 = 100)

**Railroad share of freight revenues**

Market Share (In Percent)



THE "CURE" REMEDY COULD BE A KILLER

Even with the pricing and other freedoms they won with Staggers, railroads have seen traffic and earnings decline. Reregulation could put them on a fast track to nationalization.

In the name of "fine-tuning," the long-overdue reforms in national transportation policy that came about through the Staggers Act could be destroyed.

In the name of "fine-tuning" of the Act, the railroad industry could be destroyed as an industry operating in the private sector.

In the name of "fine-tuning" of Staggers, a small group of transportation users, led by electric utility and coal interests, would sacrifice, for their own narrow interest, all the benefits to the rail industry, to consumers and to the great majority of transportation users that have stemmed from the partial deregulation of rail transportation.

Ironically, in the long run even those demanding a rollback to the days of pre-Staggers regulation would suffer. A rollback would bring, without any doubt, the rapid deterioration of the railroads' financial position, followed by deferral of maintenance, abandonment of thousands more miles of railroad line, further reductions in employment, more visits by railroads to bankruptcy courts, and perhaps the nationalization of the industry.

As with any major change in policy and practice, the change brought about by Staggers—after almost a century of total regulation—brought its share of problems.

Most of those problems have been re-

solved, many through direct negotiation and some through actions of the Interstate Commerce Commission. Negotiation brought agreement between the railroads and such major shipper groups as the National Industrial Transportation League and the Chemical Manufacturers Association. The ICC, meanwhile, was addressing issues concerning rail rates, revenue adequacy, competitive access. A number of other issues now before the Congress have already been handled through the regulatory process as well as through the negotiating process. In several key cases involving coal movements, the Commission has ordered payment of reparations where it rejected rate levels after investigation.

But with the electric utility and coal interests making up Consumers United for Rail Equity, there has been no settlement. There has not even been negotiation, because no matter how hard they try—and they have tried hard—railroads have not been able to get those interests to the bargaining table. And so the clamor for ill-advised legislation continues.

● **How Staggers has worked.** In passing the Staggers Act seven years ago, Congress had specific goals in mind—among them, to reform federal regulatory policy so as to preserve a safe, adequate, economical, efficient and financially stable rail system;

to help the industry to remain viable in the private sector; to provide a regulatory process that would balance the needs of railroads, shippers and the public; and to help with rehabilitation and financing of a rail network that could meet the demands of interstate commerce and the national defense.

As ICC Chairman Heather J. Gradison recently testified, these goals reflected Congressional concern "that a continuation of the *status quo ante* would have resulted in the loss of a viable private-sector rail system. Equally important, the Act sought reform of regulation, both as to process and substance. A balanced climate was the goal. Railroads were to have the flexibility and incentive to perform efficiently, but the Commission was to insure that captive shippers were not abused by the new freedom."

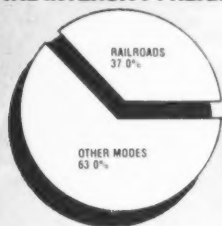
Measured by these purposes, Gradison declared, "There is little question that the Staggers Act is working successfully."

Federal Railroad Administrator John H. Riley is equally strong in his support of Staggers and what it has made possible.

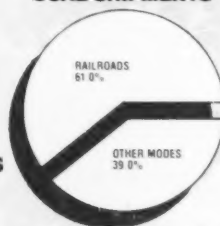
Said Riley: "The theme that should come through clearly from an oversight of the Staggers experience is that the railroad industry has not abused its pricing and marketing opportunities, and because of those

1985 railroad market shares

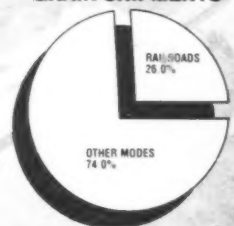
TOTAL INTERCITY FREIGHT



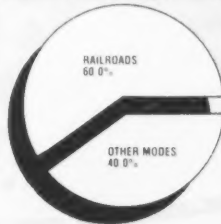
COAL SHIPMENTS



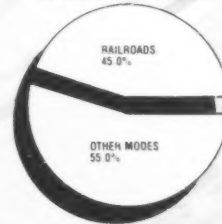
GRAIN SHIPMENTS



MOTOR VEHICLE SHIPMENTS



STEEL SHIPMENTS



opportunities has become stable while providing better shipper service. It should also be clear that while no system dependent on human judgments will ever be flawless, allowing the commercial relationship between shippers and carriers to be shaped by market forces produces better results, for shippers and carriers, than a system which delegates the major share of those decisions to a board of political appointees."

In the end, he said, "Perhaps the most significant accomplishment of Staggers lies in the fact that it has forced shippers and carriers to work directly with one another, to address their own problems and develop their own compromises. The success of that system can be measured in 50,000 contracts and in the historic agreements between the major shippers associations and the Association of American Railroads on difficult issues such as joint rates, and product and geographic competition. In contrast, a system in which ultimate pricing and contract decisions must be referred to an appointed board of arbitrators is a system which creates incentives for the parties to defer, rather than resolve, the issues of greatest importance in their relationship."

Now, Riley declared, "Proposals such as the CURE bill directly threaten much of what the Act has achieved."

What kind of industry is the railroad industry today, though? And what would proposals such as the CURE bill do to it?

First, the railroad industry today is in fact a more stable industry. Where the 1970s were marred by one rail bankruptcy after another, stretching from the Eastern Seaboard to the Upper Midwest, railroads came through the severe recession of the early 1980s without another failure.

• **What CURE doesn't tell you.** But as

AAR President William H. Dempsey points out, the resiliency of the industry "must not be overstated. America's freight railroads still face deep-seated problems. The profitability of the industry has been steadily declining. When adjusted for inflation, railroad operating earnings have dropped nearly one-third between 1980 and 1986. The industry remains unable to earn its cost of capital. In fact, railroad return on investment in 1986 was actually lower than the level recorded for 1980 when Congress authorized partial deregulation."

Return on investment last year was a mere 3.5%, down from 4.2% in 1980. ICC-measured cost of capital, by contrast, has been in double-digit percentages, running as high as 17.7% in 1982 and estimated at 11.9% for last year. Railroad return on equity, meanwhile, peaked at 10.5% in 1981 and slumped to less than 2.1% in 1986.

With fierce competition from motor and water carriers and with "traditional" rail freight markets shrinking, traffic levels have been dropping along with rates. Revenue carloadings, 22.6 million in 1980, were 19.5 million last year. Tonnage originated, 1.49 billion in 1980, added up to just 1.31 billion last year.

Freight revenues, \$25.1 billion in 1986, were down from \$26.2 billion the year Staggers was passed, and when inflation is factored in, last year's "real" revenues were just \$18.9 billion. After allowing for inflation, on a 1980=100 basis, the index of "real" revenue per ton-mile fell all the way to 76.1 in 1986.

Rate charts, meanwhile, bear out the contention by the railroads, the FRA and the ICC that the rate freedoms granted under Staggers have not been abused. By FRA's calculations, for example, between 1975 and 1980 and after accounting for in-

flation, rail rates went up by an overall average of 3% per year. Between 1980 and 1985, rail rates declined by an average of 0.6% per year. And the decline between the end of 1985 and Jan. 1 of this year was 2.4%.

Interestingly, in the context of the rate debate involving railroads and the coal and utility interests, for the period October 1980 to October 1986, industry calculations show "real" railroad coal rates dropping by 3.7% while "real" utility rates were rising by 7.9%.

• **19th Century solutions won't work.** In 1987, the 100th anniversary of the passage of the Interstate Commerce Act, CURE and its allies would turn the calendar back to that earlier era when railroads were the most tightly regulated of industries.

Railroads then were regarded as monopolies, as instruments of social policy. But regulated monopolies such as electric utilities are guaranteed a rate of return roughly equal to their cost of capital. Railroads never had that guarantee, nor have they had anything close to monopoly position for close to a half-century. As for the social-policy factor, what that amounted to was a requirement, explicit or implicit, that rail transportation and railroad companies in effect subsidize the users. That may work for a government-owned-and-operated enterprise where the government is willing to absorb losses and cover them from tax dollars. But it does not work for an enterprise owned and operated in the private sector, a fact that the Congress recognized in 1980.

All Staggers really did was take account of the principle that railroads should be treated more like other privately-owned businesses with the opportunities for survival that other businesses have, including rail customers.

As the railroads see it, "The predictable consequence of the CURE bill's attack on this economically-sound regulatory principle and the imperative it established for adequate railroad earnings would be the demise of the privately-owned rail system."

● **What CURE wants.** The CURE legislation has eight main features.

Market dominance. CURE would make subject to regulation an indeterminate number of rail rates in competitive markets by excluding geographic and product competition from the determination as to whether effective competition exists, which is the jurisdictional requirement covering the ICC's regulation of maximum reasonable rates. CURE's demands here would work in tandem with another demand related to exercise of the ICC's exemption authority.

Rate reasonableness. Here, the bill would shift the burden of proof to the carrier. It would minimize the importance of a carrier's need to earn adequate revenues, something clearly recognized by the Congress in the Staggers Act. Further, the CURE bill would create a virtual presumption as to the unreasonableness of rates above a revenue-to-variable-cost percentage of 180. More troublesome, any railroad would be prevented from raising a rate above the 180% threshold unless it could first prove all rates below the threshold were as high as possible.

In the short term, high-demand rail shippers would see rates reduced, low-demand shippers would not be affected since a rate increase would merely divert traffic, and moderate-demand shippers would see higher rates until such time as they too could divert traffic to other modes. Railroads, looking at an economically-bleak future, would look to self-preservation, to retrenchment. Low-demand shippers would lose service because railroads would concentrate available resources in high-density corridors. And as the contribution to fixed cost from low- and moderate-demand traffic dropped, inevitably the rates on high-demand traffic would go up, and rapidly.

Differential pricing, in short, is as essential to the rail industry as it is to any other industry. If the pricing freedoms allowed under Staggers had not been in effect in 1986, for example, and if an absolute 180% ceiling had been in place on all traffic, railroads would have had no profit at all. Railroads would have had a deficit of \$77 million.

Rail Cost Adjustment Factor. CURE wants the Congress to require a productivity adjustment to RCAF retroactive to 1980.

The ICC is now attempting to determine whether it is, in fact, feasible to measure productivity accurately; and if it is, just how much adjustment should be made for gains and losses. Thus, the Congress is being asked to legislate where the consequences of that legislation are unknown. Further, by turning the adjustment back to 1980, there is the potential for creating a deficit in the RCAF that would bar railroads from making inflationary cost adjustments to rates under the index process for years. As the railroads point out, "The revenue consequences could be disastrous."

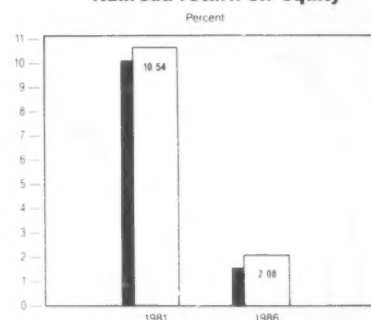
Determining revenue adequacy. CURE's demand on the Congress has four main parts. It would restate Staggers to call for a "reasonable" return on capital rather than an "economic" one. It would reduce the railroad asset base from the level that was calculated in the industry's transition from retirement-replacement-betterment accounting to depreciation accounting. It would require the use of embedded cost of debt rather than current cost. And it would require an annual revenue-adequacy proceeding for each and every rail carrier.

Railroads see two major effects coming from these provisions, both of them bad: "First, they severely reduce the allowable returns and, hence, the allowable rate levels. Second, they create a monstrous regulatory process which would be far beyond the Commission's present capacity to manage and which would divert the resources of each railroad from the provision of rail service to the provision of evidence and legal briefs."

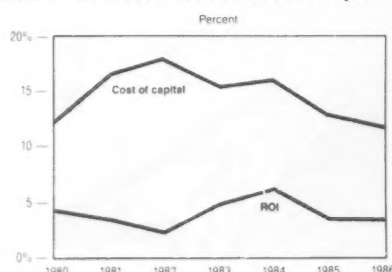
In the revenue-adequacy debate, some lawmakers with, perhaps, a greater understanding of law than of economics, challenge railroad and ICC findings of revenue-inadequacy, noting the bank balances of some railroad parent companies. But revenue adequacy is a measure of net return on investment as compared to the cost of capital, as ICC Chairman Gradison pointed out, and no railroad has a rate of return equal to the cost of debt.

Exemption authority. The ICC has been able to grant general exemptions and has, for example, on such traffic as intermodal and the movement of fresh fruits and vegetables while it retained jurisdiction to correct any abuses that might develop. Under CURE's proposal, market dominance would be more narrowly defined and the Commission would be prohibited from granting any exemption for traffic where a railroad has market dominance. Under CURE's proposal, too, the ICC would be required to make separate determinations in

Railroad return on equity

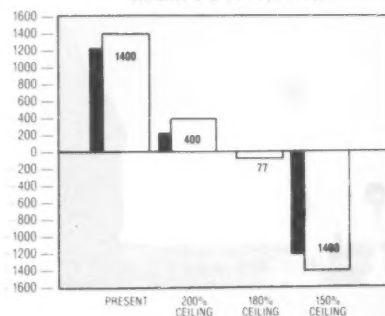


Return on investment vs cost of capital



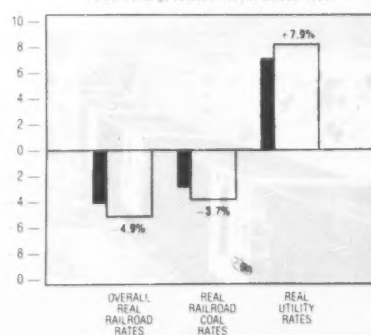
Enactment of maximum revenue/variable cost ceilings could significantly reduce the railroad industry's profits

Estimated Pre-Tax Income (Millions \$)



Railroad and utility rate trends

Percent Change (October 1980 to October 1986)



every market alleged by any "person" to show rail dominance.

What this could mean is that even if on a total basis a commodity was moving 90% by motor carrier and only 10% by rail in, say, 300 markets, the Commission could be required to examine the competitive conditions in each market before it could grant an exemption because some "person" could allege market dominance in every one of those markets. Thus, exemptions would be governed by the exception and not by the rule.

Further, by taking exempt rates and practices out from under ICC jurisdiction and discretion, exempt rates and practices would become subject to the common law of each state, producing, the railroads say, "a legal morass worse than any form of

regulation. This is, apparently, the carrot in the CURE bill that has tempted major industries represented in the Procompetitive Rail Steering Committee. But, the railroads say, the obvious effect of these provisions "would be to eliminate much of the existing differential pricing and thereby preclude any railroad from obtaining revenues sufficient to cover its full costs. That condition can only lead ultimately to bankruptcy."

Abandonment procedures. Here, CURE wants changes that would stretch out the abandonment process and raise the cost to a railroad by requiring new cost-gathering and hearing procedures. As rail costs went up, they would have to be passed along, so far as possible, to shippers using more profitable lines.

State authority. CURE would eliminate

continuation in the railroad business depend upon their ability to improve productivity, improve service and show a profit from serving a freer marketplace.

All of those things depend upon the preservation of the Staggers Act at the very least.

Union Pacific has talked about the need to meet the needs of the marketplace, about the need to earn adequate financial returns from doing that job. The alternative, UP says, is to slowly go out of business "and it is not our intent to slowly exit the railroad business. We have been investing \$500 million to \$600 million a year on the railroad for most of the past decade...and we continue to plan substantial capital investments for the future." But, says Chairman and Chief Executive Officer Michael Walsh, "What I'm telling our people is that we have to substantially increase our earnings in order to justify the investments we're making, or else we have to make another decision—a decision we don't want to make—and that is to slowly exit the railroad business. I don't see any other choice."

Officers of Norfolk Southern are saying much the same thing, that while the company wants to stay in the railroad business, if it can't meet the demands of the marketplace and do so in viable fashion, then the company may have to invest its money in other places.

Then there is Conrail.

In the early 1970s, the rail system in the Northeast was in tatters. Conrail came into being and the federal government poured money into its rehabilitation. Still, there were a lot of no-confidence votes about Conrail's future.

Earlier this year, the federal government netted about \$1.6 billion through a public offering of stock in Conrail. Essential rail service in the Northeast has been maintained, jobs have been maintained. Conrail is viable.

But what about the CURE bill and Conrail?

Chairman and Chief Executive Officer L. Stanley Crane believes that enactment of the CURE legislation "would be disastrous. That's the thing I fear more than anything else. I'm not sure that Conrail could remain viable..."

In no way, he says, is the CURE bill as written "fine-tuning." And, he says, if the bill does progress, "everybody's going to have something else to throw in. It would be a disaster for the railroad industry, and the railroad industry might well go bankrupt because of it."

Annual changes in railroad rates after inflation before and after the Staggers Act

	October 1975 - October 1980	October 1980 - October 1985	December 1985 - December 1986
All commodities	3.0%	-0.6%	-2.4%
Farm products	2.8	-0.6	-3.6
Coal	3.4	-0.4	-2.5
Chemicals	2.5	-0.6	-2.1
Primary metals	2.1	-1.0	-2.5
Automobiles and parts	1.7	-1.6	-2.1

continued federal regulation. Like the revenue-adequacy changes, this would be a bonanza for litigation-prone shippers and their lawyers. For the railroads, it would be another regulatory rat-hole into which they would have to pour resources otherwise available to market service and run trains."

Enhancement of competition. The CURE bill would have the effect of compelling the establishment of joint or proportional rates at revenue-to-variable-cost ratios no higher than on competing routes. It would compel the granting of terminal trackage rights and require reciprocal switching arrangements where necessary to provide "alternative" competitive rail service. It would create a presumption that switching rates should not exceed 180% of variable cost.

This proposal would require rail-to-rail competition to every market in an attempt to legislate an alternative to maximum rate

the Staggers requirement that states apply federal standards regarding intrastate rail traffic. It would reduce the ICC to a position where it could only make appellate review of state actions and it would put no time limits on those state actions. The interstate shipper would thus be required to subsidize the intrastate shipper, just as he did pre-Staggers. Before Staggers, the railroads say, that subsidy amounted to about \$500 million per year because of holddowns on intrastate rates. Under the CURE proposal, with no time limits on state action, "that subsidy level would be increased substantially."

• **The stakes are high.** As hearings on Staggers oversight, on the financial condition of the rail industry and on the CURE demands were continuing, railroads were making it clear that their private-sector viability, their continued investment in railroad improvements and in fact their con-

WHAT CONGRESS CAN DO TO UNSTACK THE CARDS

Railroads urgently need both the action—and the inaction—of Congress as they strive to trim down to fighting weight and compete with other modes on a more even playing field.

Even if the threat of reregulation did not exist, the relative railroad prosperity of the 1980s has to be regarded as fragile.

It is a prosperity endangered by other legislation, existing law and proposed law with application only to railroads. It is a prosperity that could crumble quickly unless the Congress acts to remove present inequities and shuns enactment of new ones.

Make no mistake: Given current business trends and competitive realities, even the most astute railroad management is severely limited in its ability to improve revenue-cost ratios. Costly inequities written into law only make the constraints tighter.

Among the legislative issues that must be confronted:

Labor protection. Only railroads are required by federal statute to guarantee job protection, and the costs have been enormous. Now, there are proposals to extend protection where it is not mandated, to sales of lines that would otherwise be abandoned. The regional-railroad movement preserves both service and jobs. A labor-protection law would cripple it.

In a national work force of close to 120 million persons, the problems of rail labor are not unique. What is unique is statutory protection of employees adversely affected by various transactions affecting employment, protection that guarantees 100% of pay for up to six years. In one recent year, this legal inequity cost just seven railroads well over \$330 million, including severance payments made for buy-out of the obligation.

Logic would say that the law covering railroads should be changed to bring railroads in line with other industry. Instead, labor wants protection extended to line sales where the ICC's view has been that preservation of service outweighs labor's self-interest as reflected in demands for protection.

Secondary picketing. Forty years ago, the Congress outlawed secondary boycotts

by labor in all industries except those covered by the Railway Labor Act. For railroads, this was a non-issue until last year, when a union turned a local strike in Maine into what could have resulted in a nationwide walkout. The U.S. Supreme Court later ruled that what the union did was legal because it had never been specifically prohibited.

This is another situation where there is no legitimate basis for treating the railroad industry differently. With the highest court's decision, rail labor is free to carry a strike anywhere, disrupting rail service and doing harm not just to railroads who are not party to the dispute but also to the nation as a whole.

As AAR President William H. Dempsey points out, in the absence of corrective legislation, unions will be able "in countless future local disputes to use secondary job actions to create or threaten to create national emergencies requiring the intervention of emergency boards and, potentially, the Congress to legislate collective bargaining settlements. Again, the Congress should ask why an action that is explicitly denied" to others in the work force continues to be available to railroad employees.

Railroad plant rationalization

Year	Class I Railroad Mileage (operated)	New Railroads Started Number	Mileage
1980	178,629	9	920
1981	176,466	9	494
1982	174,034	24	1,630
1983	170,938	22	514
1984	166,811	26	1,664
1985	160,737	29	2,385
1986	156,629	30	3,496
Totals		149	11,103

Note: During the 1980's, five railroads were declassified from the Class I status: Long Island with 681 miles; B&LE 429 miles, P&LE 412 miles, DM&IR 735 miles and E&J&E 175 miles. Thus, of the 22,000 reduction in Class I miles from 1980 to 1986, 2,432 were due to declassifications, leaving a net reduction of 19,568 miles. Of this amount, 11,103 were spun-off to local and regional railroads.

The Federal Employer Liability Act.

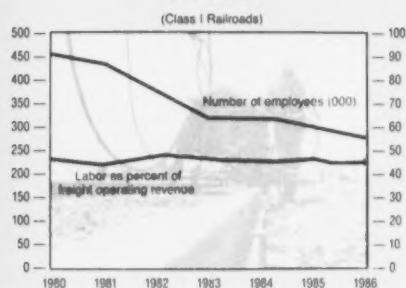
Yet another example of railroads-only legislation, FELA maintains an adversarial and fault-based system for dealing with job-related injuries and illnesses. Other industry comes under no-fault workers' compensation systems. FELA is costly. More than that, it is inequitable for affected employees. It serves the best interest of neither the railroad nor the employee.

In the case of job-related injury or illness, FELA is clearly counter to society's goal of providing fair compensation. In effect, it is a system-by-whim, in which excessive awards may be made in some cases and inadequate awards in others.

Administrative and legal costs are high. And only the tort system can explain what has happened to awards in the '80s. Since 1979, rail employment has gone down by about 40%, but payout under FELA has gone up by about 97%, from less than \$300 million to an estimated \$585 million last year.

Railroad Retirement. When you add up contributions of employers and employees, 33.3% of taxable payroll is going into the Railroad Retirement fund—and yet the fund is once again facing insolvency. Fur-

Number of railroad employees compared with labor cost as percent of freight operating revenue



ther tax increases are being proposed.

Currently, railroads send 21.9% of taxable payroll to the fund, and the employee share is 11.4%. Actuarial estimates have led to proposals for an additional tax amounting to 3%, but even that may not be enough to restore solvency.

The underlying problem is that the ratio of active employees to retirees continues to worsen, standing now at one worker to three retirees. And, while current and proposed tax levels are on a pay-as-you-go basis, there are also proposals to privatize the system and apply more stringent funding requirements. Those proposals could quadruple the additional funds needed.

Future benefit levels as well as tax levels will have to be considered. Says the AAR's Dempsey: "It is clear...that a successful solution cannot be achieved simply by increasing the railroads' contribution to the fund without immediately threatening the solvency of many railroads."

Railroad safety. Improvements in the rail safety record during the '80s have been continuous and dramatic, the envy of many another industry.

According to Federal Railroad Administration records, this is the rail industry's performance, 1979-86: Accidents, down 70.9%; the accident rate, down 62.8%; accidents attributable to track and equipment causes, down 75.2%; workplace injuries, down 66.5%; grade-crossing accidents, down 48.9%.

There is, of course, a human concern for safety. There is also an economic factor to be considered, concern for safety balanced by concern about non-productive regulation.

As the AAR's Dempsey puts it: "We do not live in a risk-free society, nor could we afford the cost of attempting to do so. Just as ignoring safety results in needless costs, so does an excess of safety regulation. At the margin, the cost of a particular incre-

ment of safety may not be worth the benefit. It is for this reason that new proposed safety regulations deserve the most serious scrutiny by the Congress, rail management and rail labor."

Antitrust legislation. Pending proposals outside the scope of the CURE proposals would put railroads in yet another situation where it is "railroads alone."

The legislation at issue would amend the Clayton Act to repeal the protection from treble damage under antitrust law which rail rates filed with the ICC now have under a judicial doctrine of long standing. In addition, the proposed legislation would remove the protection against private injunctive actions against railroads which Section 16 of the Act now provides to all common carriers with regard to any matter subject to regulation by the Commission.

In each case, the proposed repeals would apply only to railroads and not to all other regulated industries or to all other common carriers regulated by the ICC. Thus, the railroads argue, the proposals not only create a dual regulatory system by overlaying the Interstate Commerce Act with the antitrust laws with respect to the same matters but also, by singling out the railroads, "do so in a patently discriminatory manner."

Competitive equity. It is a fact that railroads pay 100% of the cost of maintaining and improving their roadway and track. It is also a fact that the major rail competitors, motor carriers and barge lines, do not pay 100% of what may be regarded as their fair share of maintenance/improvement cost for their rights-of-way.

The 1982 Federal Highway Cost Alloca-

Railroad safety has significantly improved



tion Study, recently updated for 1985, held that trucks of 75,000 pounds gross weight or more paid just 65% of their cost responsibility. Rail-competitive trucks, logically, pay less since they travel at greater loaded weights and run up high annual mileages. Using the methodology based on the '82 study, the AAR estimates that rail-competitive trucks "pay only about 50% of their cost responsibility."

By AAR estimates, based on 1985 and updating the cost-allocation numbers, heavy trucks owed \$1,845 million and paid \$1,206.6 million, leaving a gap of \$638.4 million, a gap that "is reflected in lower truck rates and places the railroads at a serious competitive disadvantage."

Even-less-equitable numbers show up so far as water carriers are concerned. Barge-industry user-charge payments run about \$50 million per year. But the U.S. Army Corps of Engineers spends about \$575 million per year on shallow-draft navigation projects and, the AAR says, "the 10-year, phased-in increase in barge user charges passed last year will make only a small difference. Even by 1995, when the barge user charge is fully phased-in, the barge industry will be covering no more than 15% of federal spending on its behalf."

If the truck and barge subsidies are fully reflected in reduced rates, the railroads contend, the competitive effect on rail rates is to reduce rail revenues by more than \$1 billion per year.

What all of this means, the AAR's Dempsey declares, is that "the railroad industry is being subjected to unnecessary costs or put at a cost disadvantage in the marketplace. If the Congress is to stay the course it set in the Staggers Act—to assist the rail system to remain viable in the private sector of the economy—it has to remove the statutory obstructions which lie in that course and to avoid erecting any others." ■

Heavy trucks pay only a portion of their total cost responsibility



Fourth quarter figures of calendar year 1986

(Dollar figures are stated in thousands, i.e., with last three digits omitted)

[illegible]

Grand Trunk Western.....	3 mos.	75,667	3,267	78,934	87,565	12,154	11,278	1,703	23,598	17,435	6,739	102,278	85,801	129,57	97,98	(24,302)	1,284	(21,497)	(23,881)	2,235
	12 mos.	308,519	14,511	323,030	342,947	41,842	42,874	6,779	80,099	71,072	11,581	353,521	338,118	109,43	98,59	(19,643)	951	(26,504)	(15,446)	6,130
Illinois Central Gulf.....	3 mos.	129,062	17,103	146,180	208,078	19,390	26,355	8,621	47,956	59,034	1,574	136,330	196,732	93,26	94,54	43,567	20,152	4,302	38,181	16,903
	12 mos.	608,087	71,401	679,488	880,518	74,982	115,202	9,055	436,744	261,530	136,394	1,028,626	836,747	151,38	95,02	(330,390)	36,840	(190,080)	(171,674)	29,968
Kansas City Southern.....	3 mos.	72,434	3,223	75,657	75,540	30,628	13,009	17,866	54,826	16,086	43,307	119,613	64,602	158,09	85,52	(42,194)	9,288	(23,902)	(22,108)	5,534
	12 mos.	282,116	13,796	299,912	316,704	69,520	48,682	30,377	102,748	68,982	58,870	307,322	270,164	102,47	85,30	(10,278)	39,397	585	(2,962)	23,792
Missouri-Kansas-Texas.....	3 mos.	53,918	2,209	56,127	57,656	11,385	10,152	2,875	14,655	13,148	1,854	56,284	57,412	100,27	99,57	2,327	(4,108)	101	3,671	(3,935)
	12 mos.	222,083	10,612	232,695	263,102	44,443	49,311	11,548	58,669	62,137	7,434	227,435	251,483	97,73	95,58	6,781	(54)	6,282	24,662	(5,681)
Norfolk & Western.....	3 mos.	398,052	16,395	414,447	434,026	64,241	65,237	12,656	86,855	88,379	14,241	347,609	352,664	83,87	81,25	154,115	102,861	11,285	581,003	63,369
	12 mos.	1,577,192	82,752	1,639,944	1,720,856	257,156	249,728	48,624	342,031	348,335	56,990	1,331,779	1,365,983	81,20	79,37	472,910	469,550	127,477	590,050	281,306
St. Louis Southwestern.....	3 mos.	91,198	1,829	93,027	95,336	64,019	16,444	50,855	58,296	21,735	44,296	180,554	85,743	194,08	89,93	(81,697)	10,528	(49,760)	(43,930)	7,688
	12 mos.	354,864	5,767	360,631	390,086	107,263	59,773	65,055	120,472	98,626	59,981	423,570	362,228	117,45	92,85	(54,752)	31,813	(34,665)	(26,478)	21,229
Seo Line.....	3 mos.	141,709	4,982	146,671	157,131	32,329	34,152	7,580	53,374	41,081	16,301	216,015	159,582	147,27	101,55	(88,108)	6,572	(35,727)	(34,945)	4,576
	12 mos.	586,261	20,015	606,276	600,373	125,684	124,681	29,670	167,163	151,848	26,705	674,412	597,922	111,23	99,59	(72,736)	(10,646)	(28,234)	(34,955)	(2,056)
Southern Pacific.....	3 mos.	446,807	18,388	465,195	483,245	286,588	64,080	191,579	205,958	132,253	93,532	944,060	486,523	202,93	100,67	(499,997)	45,955	(276,197)	(287,690)	61,802
	12 mos.	1,836,389	72,626	1,909,015	2,053,880	497,635	270,290	265,594	599,541	585,914	155,082	2,426,668	2,064,407	127,11	100,51	(477,847)	89,546	(292,103)	(254,258)	116,976
Southern.....	3 mos.	401,169	8,252	409,421	420,014	63,496	52,876	17,567	80,344	82,677	20,731	341,768	334,528	83,47	79,64	82,447	90,381	36,066	44,299	52,796
	12 mos.	1,641,295	36,989	1,678,284	1,704,338	251,256	238,694	68,558	337,575	350,514	80,117	1,324,532	1,365,735	78,92	80,13	362,746	341,018	216,835	217,199	207,687
Union Pacific.....	3 mos.	924,980	19,864	944,844	924,733	106,482	120,647	27,048	197,641	189,021	33,812	729,486	785,492	77,20	84,94	221,235	131,456	109,675	113,207	98,101
	12 mos.	3,693,618	73,311	3,766,929	3,728,877	479,686	507,794	108,277	786,135	774,793	135,099	3,014,915	3,235,279	80,03	86,76	712,976	459,839	737,162	28,880	321,985

Source: Interstate Commerce Commission

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Railway Age

August 1987

C8400-1 A
8/28/87

...for the new age of railways

THE ARCHITECTS OF CHANGE:

Conrail's
L. Stanley Crane

"Railroads
must create
a cohesive
inter-regional
rail network..."

Brendan McNally
Congressional Info Service CIS
4520 East-West Highway
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2

1987 Directory of Contract Car
and Locomotive Repair Shops

Railway Age

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August 1987

Railway Age
...for the new age of railways

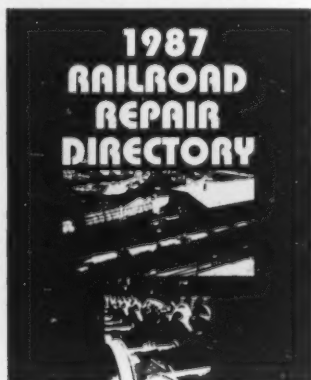
Features

29 The architects of change: L. Stanley Crane

Conrail's chairman and CEO says the industry needs to create a cohesive inter-regional network—"a near duplication on the rails of the interstate highway system."

RD-1 1987 Railroad Repair Directory

Railway Age's exclusive guide to freight-car and locomotive contract repair shops in the U.S. and Canada, with a description of the work that each is prepared to perform.



35 Bridging the equipment gap

Used vs new, lease vs buy were the big topics at the Railway Age/Irving Trust Co. Financial Conference on Equipment. Consensus: There will be more leasing of used cars and locomotives.

39 What's new in coatings?

The pace of innovation has quickened as equipment owners and coatings suppliers seek to comply with regulations aimed at reducing health and environmental hazards.

45 CP Rail moves toward ATCS

Already producing "spectacular" results is the first building block—a Computer Aided Manual Block System—as CP works with C&S suppliers on other ATCS components.

49 California: Back on track

A spirited revival of light rail that began in San Francisco has now spread to four other cities in "the Freeway State"—San Diego, Sacramento, San Jose, Los Angeles.



Comment

- 8 Inside
- 15 Watching Washington
- 16 Lines on labor
- 62 Perspective

Departments

- 10 Meetings
- 11 Industry Outlook
- 12 Market Outlook
- 56 Literature
- 57 People in the News

Update

- 19 U.S. roads test African super-ties
- 19 Cedrite contracts with UP, Santa Fe
- 19 Tie Association steps up R&D
- 22 80 leave ICG, including president
- 22 Wisconsin Central arranges financing
- 22 MidLouisiana Rail acquires 65 miles

- 24 Railroad sues utility on "take-or-pay" breach of contract
- 25 Union Pacific revamps century-old operating structure
- 26 The shares shift, but Trailer Train remains rail-owned
- 26 Railmaster heads for '87 start-up
- 48 New directions for federal funding?

- 48 ASEA enters the Florida race
- 48 Maglev people mover for Las Vegas?
- 48 WABCO adds Walton to coupler line
- 48 Lower inflation cuts cost of BART cars
- 48 291 transit grants approved by UMTA

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USPS 449-130, Vol. 188, No. 8

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Market Outlook

Facilities

BART: Received an \$8-million grant from the Urban Mass Transportation Administration to be applied to the \$14.9-million cost of a new wayside train control system that is to be completed in the summer of 1989.

CN Rail: Is acquiring two new 100,000-pound, SSB-100 straddle cranes from Marathon LeTourneau for use at its Montreal intermodal facility.

Indiana Rail Road: Will spend more than \$1 million on a track rehabilitation program that will include relaying of 7.3 miles of rail, installation of more than 2,000 crossties and 10,000 pounds of ballast, and surfacing of 40 miles.

Los Angeles County Transportation Commission: Awarded a \$24.8 million contract to Morrison-Knudsen for the construction of overpasses at four locations along the 21.5-mile route of LACTC's Long Beach-Los Angeles rail line.

PATH: Directors authorized construction of a \$205-million car maintenance shop and yard at Harrison, N.J., to replace a 77-year-old facility at Jersey City. Scheduled for completion in 1990, the new facility will comprise a 207,000 square foot maintenance and repair shop and associated support and lay-up yards. Also approved were installation of two new stairways and two new escalators at the World Trade Center terminal at a cost of \$7.8 million; and award of a \$778,000 contract to BBC Brown Boveri for the supply of four ac/dc electrical conversion packages for two substations in New Jersey.

Stockholm Metro: Awarded a contract to SEL Canada in cooperation with Standard Radio & Telefon AB for the supply of a passenger information system. The contract also calls for a study of ways to modernize the Stockholm Metro control center. SEL Canada is the supplier of the SELTRAC system which controls Vancouver's SkyTrain.

VIA Rail: Will begin construction of a \$22-million (Canadian) maintenance facility in Vancouver, B.C., this fall. VIA will also invest \$7 million in an equipment shop in Winnipeg, Man.

Revenue freight carloadings

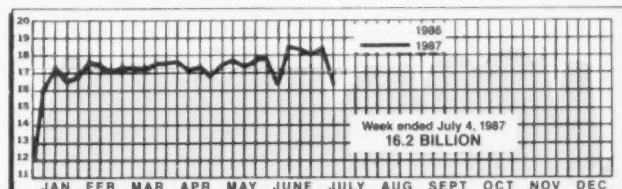
Commodity	June 13 week	June 20 week	June 27 week	July 4 week
Grain	33,308	33,228	34,688	29,620
Other farm products	5,354	6,517	4,381	4,133
Metallic ores	18,103	18,362	16,035	17,630
Coal	115,710	115,937	117,180	81,376
Crushed stone, gravel and sand	14,920	13,898	16,399	13,784
Nonmetallic minerals	10,031	9,409	10,032	8,198
Grain mill products	11,365	10,794	10,825	9,324
Food and kindred products	10,642	10,708	10,661	9,685
Primary forest products	10,769	10,421	10,630	9,311
Lumber and wood products except furniture	8,637	8,600	9,252	7,448
Pulp, paper and allied products	12,204	12,333	13,009	11,981
Chemicals and allied products	26,035	24,993	25,703	23,693
Petroleum products	5,026	5,054	4,982	4,448
Stone, clay and glass products	11,176	10,546	10,632	9,988
Coke	4,527	5,548	5,576	5,074
Metals and products	8,688	8,814	8,728	9,004
Motor vehicles and equipment	21,394	20,004	17,827	12,736
Waste and scrap materials	8,923	8,841	8,307	7,065
Forwarder and shipper assn. traffic	2,882	2,666	2,890	2,924
All other carloads	76,418	75,375	77,934	70,115
LCL traffic	86	98	106	83
Total Cars Loaded	416,198	412,146	415,777	347,620
% change from previous year	5.4	4.7	5.5	19.9
Estimated revenue ton-miles (billions)	18.3	18.1	18.4	16.2
% change from previous year	8.3	6.0	7.2	15.3
Total:	1987	1986	% change	
27 weeks	462.0	448.6	3.0	

Piggyback loadings

	June 13 week	June 20 week	June 27 week	July 4 week
Trailers/containers	101,481	100,570	103,914	94,357
Cumulative total, 27 weeks	% change from 1986			
Trailers/containers	2,604,505			3.7

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED		ORDERED		ON ORDER AND UNDELIVERED	
	2nd quarter 1987	2nd quarter 1986	2nd quarter 1987	2nd quarter 1986	July 1 1987	July 1 1986
Built new by carbuilders	3,198	2,433	4,780	3,315	5,432	4,257
Rebuilt	0	0	0	25	0	25
TOTAL	3,198	2,433	4,780	3,340	5,432	4,282
Locomotives (new and rebuilt)	39	141	N/A	N/A	7	144

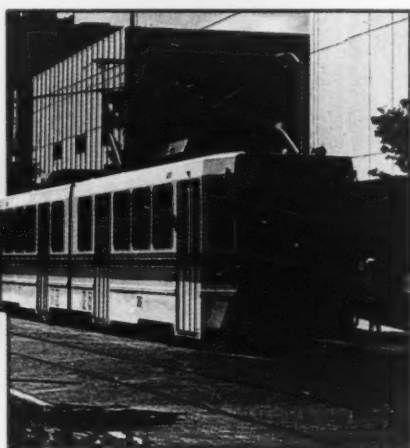
Source: Transportation Div., AAR and American Railway Car Institute

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September 1987
C8400-1A-
9/28/87

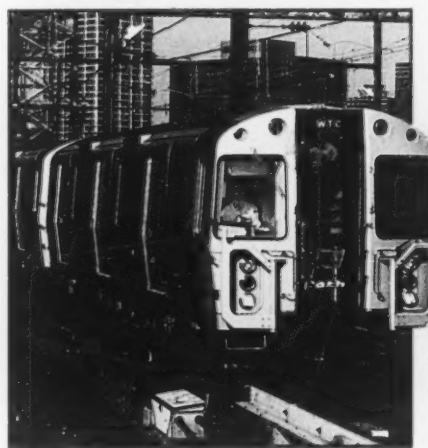
...for the new age of railways and rail transit

AMERICA IN TRANSIT



Sacramento's Siemens-Duewag LRVs

Two notable anniversaries—the electric street railway's 100th, and PATH's 25th—underscore the enduring vitality of rail transit as a mover of people.



PATH's new Kawasaki cars

High productivity trains:
How integral? How imminent?



Trinity/Pullman bulk commodity HPIT

How Union Pacific makes
m/w dollars work harder

Brendan McNally
Congressional Info Service Inc.
4520 East-West Highway
Bethesda MD 20814-3389

Railway Age

...for the new age of railways

September 1987

Features

39 Union Pacific: Making good track better

System-wide, UP is dedicated to customer service—and UP's engineering department is dedicated to giving the best to its own customer, the transportation department.

43 High productivity trains: How integral? How imminent?

A whole new fleet of special-purpose trains—including some that are taking shape outside the HPIT program—may soon revolutionize the freight marketplace.

83 Pueblo preps for HAL tests

The Transportation Test Center's Heavy Axle Loading program will probe the effects of heavy loads on rail and other components of the track structure.

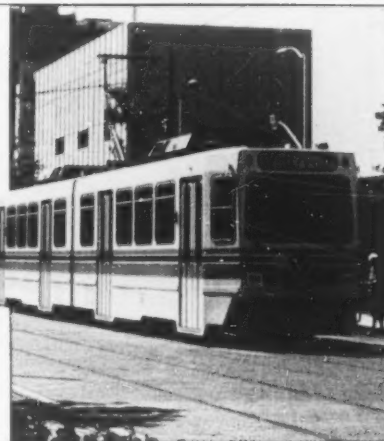
88 The labor scene: A mediator's view

Profound changes in the conduct of labor-management relations may lie ahead. National Mediation Board member Walter C. Wallace assesses their potential import.

AMERICA IN TRANSIT

Two milestone anniversaries underscore the continuing, vital role of rail transit in the American urban lifestyle.

**From streetcars to light rail:
A centennial perspective . p. 55**
PATH: 25 going on 80 ... p. 71



Cover photos (clockwise): William D. Middleton, Robert G. Lewis, Trinity Industries.

Departments

- 10 Meetings
- 13 Industry Outlook
- 14 Market Outlook
- 77 VTS Newsletter
- 105 Letters
- 106 Bookshelf
- 108 People in the News

Comment

- 8 Inside
- 19 Watching Washington
- 20 Lines on labor
- 114 Perspective

Update

- 24 Zimmark oil-lubricant reclamation system pays off for Canadian Pacific
- 25 RRV&W gets rolling in North Dakota
- 26 Union Tank opens new Georgia shop
- 26 ASEA, Brown Boveri agree on merger
- 27 1,100 on NS are offered early retirement
- 27 New "IHB Express" moves steel faster
- 30 ACF's infrared ovens cut paint-drying time
- 30 Joint venture formed to promote regionals
- 31 New owner will restructure the ailing P&LE
- 31 Test III shapes up at Montreal shops
- 32 CSX forms new intermodal unit
- 32 Massachusetts yard picks up customers
- 33 RoadRailers link Detroit, Atlanta
- 33 Plant to showroom it's NS all the way
- 33 CSX/ACL: ICC finds no adverse effects
- 34 Transit Expo has a strong foreign accent
- 34 Denver looks to driverless system
- 35 JARTS joins Florida team
- 35 PATCO marks a milestone
- 36 Summer travelers flock to Amtrak
- 36 Twin Cities take separate paths
- 36 End of the line for Pennsylvania HSRC?
- 37 Brown Boveri wins \$43-million dual-mode rebuild contract

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Market Outlook

Equipment

British Rail: Has invited bids from six builders, including General Motors and General Electric, for the supply of 100 freight diesel-electric units valued at an estimated \$160 million. Bids were also invited from three British builders and a British-German-Swiss consortium.

NJ Transit: Is seeking a federal grant for installation of automatic train control equipment on 33 locomotives and 300 m-u cars.

Pullman Leasing: Ordered 150 5,850-cubic-foot-capacity covered hopper cars for plastic pellet service from Trinity Industries. Earlier, Pullman Leasing ordered 100 such cars from Trinity which were pre-leased (RA, June, p. 16); the additional cars are being ordered to meet anticipated demand. All cars will be equipped with the Air-Release® venting system, Sur-Latch® hatch covers and Micro-Matic® discharge gates. Meanwhile, Union Pacific has signed a lease with Pullman Leasing for 150 3,148-cubic-foot-capacity Twin-Hopper® cars.

San Diego Metropolitan Transit Development Board: Placed an order with Siemens-Duewag for an additional 20 U-2 double-ended, articulated light rail cars costing \$21 million. Completion of this order, the San Diego Trolley's fourth, will bring the vehicle fleet to 50. Deliveries are to begin in February 1989 and be completed in September 1989. Fifteen of the cars are for the El Cajon Line extension and five are for the new Bayside Line in Centre City.

Union Pacific: Ordered 100 microprocessor-equipped locomotives at a total cost of \$110 million—75 4,000-hp Dash-8 units from General Electric and 25 3,800-hp SD60 units from the Electro-Motive Division of General Motors. Deliveries are to be completed next March.

Facilities

Association of American Railroads: Has contracted with Sperry Rail Service for semi-annual induction/ultrasonic inspection of the 45 mile test track at the Transportation Test Center, Pueblo, Col.

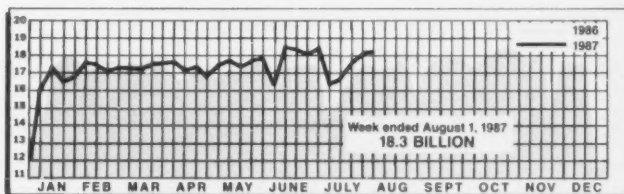
Bay Area Rapid Transit: Entered into an agreement with Bechtel Civil, Inc., under which the latter will provide a wide variety of engineering support services with a potential value of \$1.5 million. Bechtel subcontractors in the assignment are Wong Engineering Inc., J. Warren and Associates, YEI Engineers, Inc., Innova Corp., Trans-Pacific Geotechnical Consultants, Inc., Geo Resource Consultants, and Greiner Engineering of California, Inc.

BC Rail: Will construct a 3,660-foot tunnel through the Shalalth bluff just north of Seton Portage, at a point where

Revenue freight carloadings

Commodity	August 1 week	July 25 week	July 18 week	July 11 week
Grain	30,659	31,589	34,482	32,079
Other farm products	3,293	3,320	3,464	3,706
Metallic ores	15,892	17,188	15,451	15,293
Coal	114,542	112,358	107,797	83,777
Crushed stone, gravel and sand	16,781	16,580	16,414	15,439
Nonmetallic minerals	10,653	7,950	8,488	9,436
Grain mill products	10,561	10,732	10,673	10,436
Food and kindred products	11,526	11,004	10,387	10,048
Primary forest products	10,884	11,040	10,887	10,509
Lumber and wood products except furniture	8,957	8,211	8,225	7,417
Pulp, paper and allied products	12,928	12,060	11,529	12,645
Chemicals and allied products	25,071	25,264	24,056	24,786
Petroleum products	5,135	5,233	5,142	5,221
Stone, clay and glass products	11,450	11,267	10,918	10,694
Coke	5,152	5,475	4,913	5,255
Metals and products	9,375	9,084	9,036	8,445
Motor vehicles and equipment	13,968	14,967	14,511	11,548
Waste and scrap materials	8,405	8,497	8,566	7,861
Forwarder and shipper assn. traffic	2,777	2,744	2,817	2,859
All other carloads	76,091	75,628	69,042	67,727
LCL traffic	97	72	57	69
Total Cars Loaded	404,197	400,263	386,855	355,250
% change from previous year	5.8	4.5	3.7	2.4
Estimated revenue ton-miles (billions)	18.3	18.2	17.8	16.7
% change from previous year	6.2	5.5	6.5	6.2
Total:	1987	1986	% change	
31 weeks	533.0	515.5	3.4	

Rail freight traffic trends



Source: Association of American Railroads

Piggyback loadings

	August 1 week	July 25 week	July 18 week	July 11 week
Trailers/containers	101,213	99,451	99,406	92,595
Cumulative total, 31 weeks				% change from 1986
Trailers/containers	2,996,812			3.5

two separate slides interrupted service for a total of 17 days last year. Cost is estimated at \$19 million (Canadian).

CSX Transportation: Awarded a contract to Union Switch & Signal for the supply of equipment for a new centralized dispatching center at Jacksonville, Fla. The cost was not specified. Equipment will include three pairs of DEC 8500 series processors, each pair consisting of a primary and a standby unit. Each dispatcher will have four CRTs—a detailed call-up CRT; two information scan CRTs; and a communications touch-activated CRT.

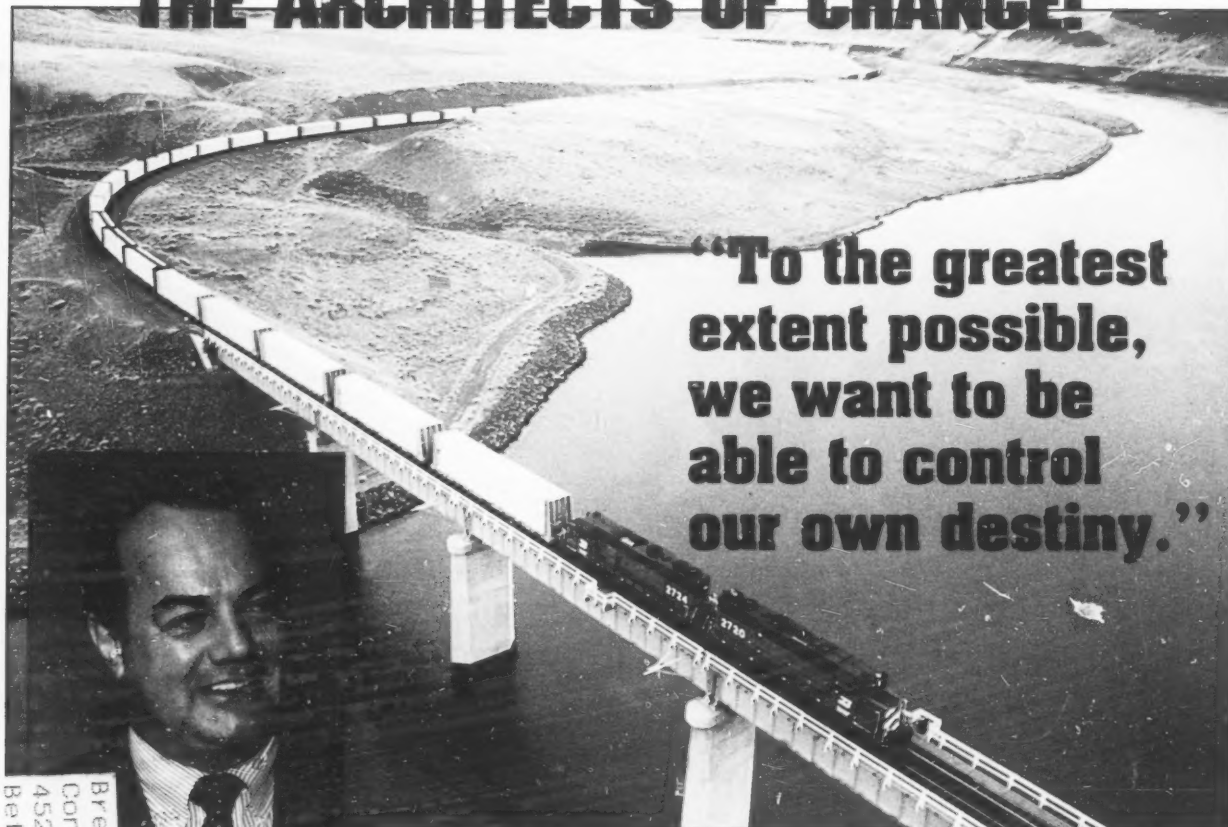
Railway Age

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...for the new age of railways and rail transit

THE ARCHITECTS OF CHANGE:



"To the greatest extent possible, we want to be able to control our own destiny."

Burlington Northern's Darius W. Gaskins, Jr.

**Rio Grande:
Testbed for C&S innovation**

**Crossing protection:
Time for a new look?**

**Signaling light rail: How
Pittsburgh met the challenge**

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Railway Age

...for the new age of railways

October 1987

Features

39 Architects of change: Darius W. Gaskins, Jr.

"To the greatest extent possible, we want to be able to control our own destiny," says BN's president and CEO. That means, among other things, greater freedom for management to manage.



Page 39

47 For Alaska, a "new" railroad

Despite economic hard times in the 49th state, ARRC is on a profitable course, thanks to a massive rehabilitation program and a new, common-sense labor agreement.



Page 47

51 Rio Grande: Testbed for C&S innovation

A vital radio-based signal and control system is getting its first test on the railroad that was a pioneer in computer-assisted dispatching and crew management.

55 TTC tests hotbox detectors

It's back to the test track for already-proven detectors to see how they will work with "new and untried" equipment designs—for example, single-axle intermodal cars.

59 Crossing protection: Time for a new look?

Without minimizing the role active warning devices have played in reducing crossing accidents, safety officials want more emphasis on education and enforcement.

63 Paper filters win turbo test

After a year of testing, a midwestern railroad has found that paper barrier media filters protect turbochargers better than do fiberglass bag filters.

67 Pittsburgh light rail: A signaling challenge

Here's how a Parsons Brinckerhoff/Gibbs & Hill joint venture team custom-designed a system to fit a complex route and meet unusual traffic requirements.

Comment

- 8 Inside
- 19 Watching Washington
- 20 Lines on labor
- 86 Perspective

Departments

- 12 Meetings
- 14 Industry Outlook
- 16 Market Outlook
- 57 Letters
- 74 People in the News
- 76 Products Report
- 85 100 Years Ago

Update

- 23 BN tests multipurpose Beth-Combo car
- 23 NYK introduces new double-stack
- 23 Kentuckian buys 62 miles of CSX
- 23 TSD operation cuts BN's lab costs
- 23 L&D: Claims down, payout ratio up
- 24 SPT divestiture options outlined
- 24 Now it's TCU, not BRASCFHESE
- 25 SPT, UP agree on trackage rights
- 25 More NS workers get buyout offer
- 25 ICC delays sale of Lake States
- 25 PLM forms new Canadian subsidiary
- 27 For smart shippers, BN offers ShipSmart
- 27 BN adds new hub, new Expeditors
- 31 Conference set on locals, regionals
- 31 Mark V RoadRailers will go to UP
- 31 Lone Star gets head start at Denver
- 34 IITRI introduces improved simulator
- 34 Intermodal company formed by Strick
- 34 Safety Council honors 12 railroads
- 37 Club Service a hit with Amtrak riders
- 37 "Glengyle," 76, wins landmark status
- 37 High-speed concept gains in California
- 37 Bombardier buys Budd car designs
- 37 VIA Rail opens new Montreal shop
- 37 St. Louis LRT: The home stretch
- 37 Shanghai picks U.S. consultant
- 80 Activity picks up at Bethlehem's FCD
- 80 NS streamlines operating structure
- 81 Canadian dispute goes to arbitrator
- 81 Rock stabilization pays off for CN
- 81 Truck-Rail-Truck service expanded

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Market Outlook

Equipment

Conrail: Completed a \$1.9-million program to modify 100 60-foot boxcars for the transportation of motor vehicle parts. The work, which involved raising the roofs of the cars by 21 inches, was performed at Conrail's Hollidaysburg, Pa., shop. The cars will be assigned to General Motors service.

Montreal Urban Community Transit Commission: Awarded a \$1-million (Canadian) contract to Michelin Tires to supply 2,570 tires to the Montreal Metro next year. Michelin has supplied tires to the Metro since it opened in 1966.

Norfolk Southern: Ordered 500 3,000-cubic-foot-capacity covered hopper cars for cement service from the Freight Car Division of Bethlehem Steel. Deliveries will begin this year and continue into early 1988. The order is the largest received by the Bethlehem division since it was formed in August 1983.

PLM Railcar Maintenance: Has contracted to service 500 covered hopper cars for a major railroad at its Rock Springs, Wyo., repair facility. PLM Chairman and CEO Mark C. Hungerford foresees "an increase in orders to service the railroads as RMC expands its maintenance and retrofitting business."

Facilities

CSX Transportation: Has officially dedicated its consolidated signal shops at Savannah, Ga. The facility consists of a new 10,000-square-foot building and a modernized existing structure. At the dedication ceremony Sept. 18, CSX Rail Transport President Ronald W. Drucker said the expanded facility "will efficiently support the needs of our entire 20-state system because it incorporates the most modern production equipment and work methods available."

Metra: The Chicago-area Metropolitan Rail commuter system awarded contracts for construction or rehabilitation of nine commuter rail stations at a total cost of \$11.3 million.

Southern Group: Has contracted with United States Railroad Services, Inc., of Parker, Col., to market tropical hardwood ties throughout the U.S. and Canada. Southern Group has negotiated an exclusive contract with African timber sources to make the ties available in North America (RA, Aug., p. 19).

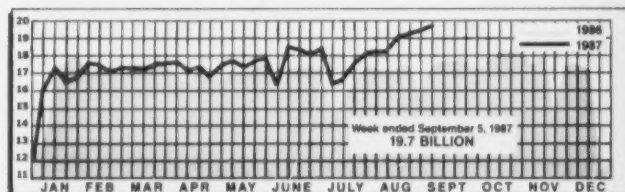
Union Pacific: Will build a new intermodal terminal at Memphis at a cost of \$4 million, with completion scheduled for early next year. The facility will be able to accommodate up to 71 intermodal cars on four tracks and will

Revenue freight carloadings

Commodity	Sept. 5 week	August 29 week	August 22 week	August 15 week	August 8 week
Grain	31,953	30,945	31,807	29,690	29,458
Other farm products	2,802	2,682	2,403	2,702	2,810
Metallic ores	19,194	18,128	18,548	16,423	13,146
Coal	124,864	125,023	127,155	122,806	112,801
Crushed stone, gravel and sand	17,061	17,229	16,914	18,360	17,602
Nonmetallic minerals	10,761	10,061	9,601	9,957	10,102
Grain mill products	11,005	10,394	10,736	10,790	10,430
Food and kindred products	10,847	11,247	11,134	11,064	10,834
Primary forest products	10,720	10,698	10,802	10,590	10,447
Lumber and wood products except furniture	8,484	8,822	8,416	7,990	7,948
Pulp, paper and allied products	12,893	12,628	12,013	12,292	12,438
Chemicals and allied products	27,776	25,762	25,980	26,775	25,657
Petroleum products	5,356	4,973	4,904	5,377	4,849
Stone, clay and glass products	11,643	11,213	11,410	11,079	11,120
Coke	4,748	5,694	5,005	5,152	4,909
Metals and products	10,212	9,728	9,398	9,367	8,889
Motor vehicles and equipment	18,021	16,908	15,552	15,372	14,381
Waste and scrap materials	9,358	9,088	8,881	8,857	8,561
Forwarder and shipper assn. traffic	3,356	3,239	3,105	2,994	3,052
All other carloads	82,670	81,211	79,498	79,658	77,110
LCL traffic	130	92	77	94	79
Total Cars Loaded	433,954	425,765	423,537	417,389	396,683
% change from previous year	28.5	8.6	9.5	8.5	5.3
Estimated revenue ton-miles (billions)	19.7	19.3	19.2	19.0	18.2
% change from previous year	30.4	10.7	10.0	9.3	8.7
Total:		1987	1986	% change	
36 weeks		628.4	599.9	4.7	

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Piggyback loadings

	Sept. 5 week	August 29 week	August 22 week	August 15 week	August 8 week
Trailers/containers	105,390	103,790	100,266	99,177	100,161
Cumulative total, 36 weeks			3,505,685	% change from 1986	
Trailers/containers				3.7	

have paved parking area for 440 trailers/containers. UP will acquire a new side-loading/unloading unit for trailer/container transfer.

Washington Metropolitan Area Transit Authority:

Awarded a \$12.2-million contract, with options for an additional \$4.7 million, to Cubic Western Data for new computerized fare collection equipment to be installed on line extensions. The base contract calls for 253 pieces of equipment.